

# **COMMONWEALTH of VIRGINIA 2007 STATE OF THE COMMUTE SURVEY**

## **Summary Report - April 2009**

**Prepared for:**

**Virginia Department of Rail and Public Transportation**

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## **OVERVIEW AND METHODOLOGY**

### **Overview**

Transportation plays a significant role in the lives of Virginia commuters. It defines the opportunities and limitations of their mobility – their ability to travel when and where they want and need to travel. Transportation also affects residents' quality of life in more general ways, through links to environmental sustainability and economic growth.

In 2007, the Virginia Department of Rail and Public Transportation (DRPT) conducted a travel and transportation survey of employed residents of the Commonwealth of Virginia. The purpose of this Virginia State of the Commute (VA SOC) survey was to document a profile of Virginians' travel to work, their opinions and attitudes about commuting, and the services they use to make commuting easier. As the first such statewide commute survey performed in Virginia, it defines a baseline against which future commute changes can be examined. This report describes the survey methodology, presents key findings statewide, and offers comparisons of commute travel for various regions of the state.

### **Survey Methodology**

The VA SOC survey expanded on a State of the Commute survey conducted by the Commuter Connections program of the Metropolitan Washington Council of Governments (MWCOG) in 2007 for the Washington, DC metropolitan region. The MWCOG survey collected data for 3,005 employed residents of Northern Virginia. Using a compatible survey instrument, the VA SOC survey collected data for 4,040 employed residents from other parts of the state. DRPT obtained data for Northern Virginia respondents from MWCOG and combined these data with data for the rest of Virginia to provide a statewide dataset for analysis.

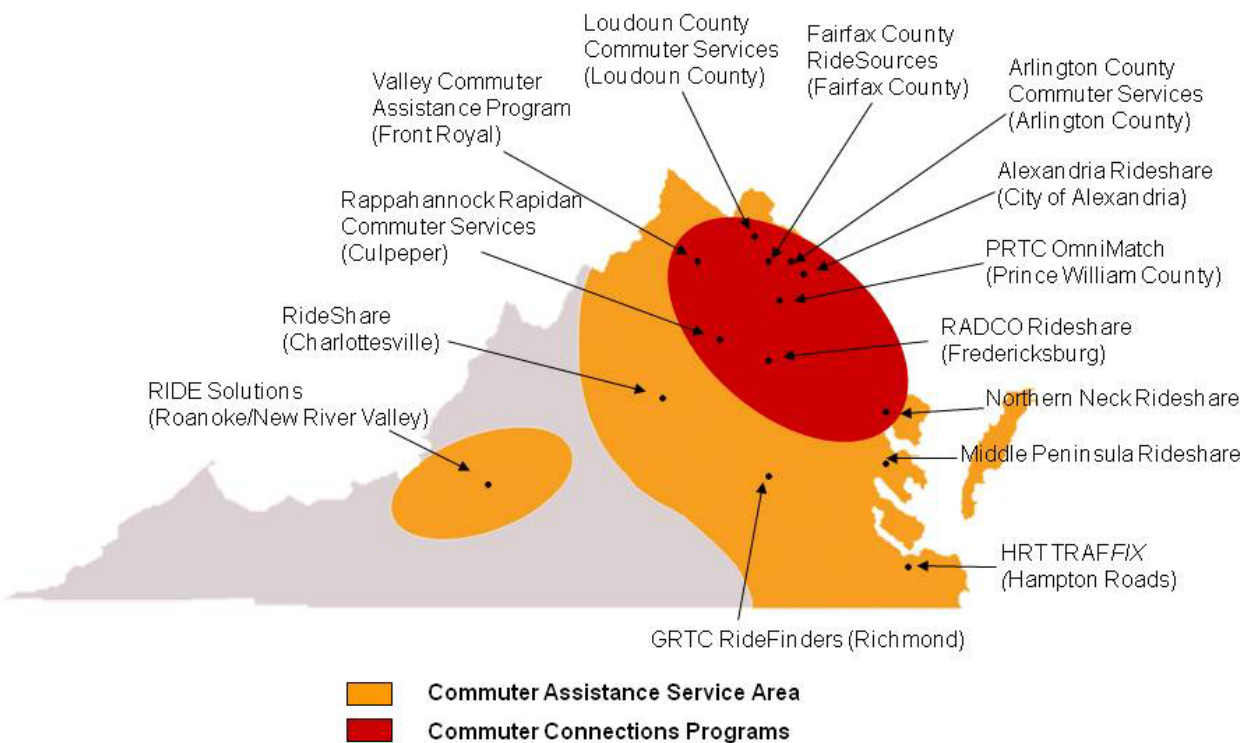
The survey interviewed randomly-selected Virginia residents who were at least 18 years of age and who were employed, either full-time or part-time. The survey explored characteristics of and opinions about travel to work, thus residents who were not employed (e.g., retired, keeping house, looking for work, etc.) at the time of the survey were not included in the survey. Additionally, the travel patterns described in the report relate only to commute travel. They do not include travel for school, shopping, recreation, or other non-commute purposes. The survey also did not explicitly address stops, such as to drop children off at school or perform personal errands, which respondents might make as a regular part of their commute trips.

One goal of the survey was to compare commute patterns in various Virginia regions. To this end, survey interviews were sampled from 16 areas that collectively covered the entire state. Fourteen of the areas corresponded to the service areas of 14 regional organizations that provide travel information and services to commuters and other travelers in their regions. The remaining two areas included counties adjacent to the 14 regional commute service areas ("feeder" areas) and counties distant from these service areas ("unserved" areas).

At least 175 interviews were conducted in each of the 16 areas, but larger samples were collected for the major metropolitan areas of the state. The total 7,045 surveys were distributed as follows:

- Northern Virginia “Served” Areas (3,005) – Alexandria (600), Arlington (600), Fairfax (601), Loudoun (603), Prince William (601)
- Other “Served” Areas (4,040) – Charlottesville (301), Culpeper (305), Fredericksburg (604), Front Royal/Winchester (304), Hampton Roads (607), Middle Peninsula (175), Northern Neck (204), Richmond (632), and Roanoke (300)
- Feeder counties (302)
- Unserved counties (307)

**Figure 1**  
**TDM Service Area**



**Table 1**  
**TDM Service Areas**

<b>Northern Virginia Organizations – Members of the Commuter Connections Network</b>	<b>Service Area</b>
<a href="#">Commuter Connections Regional Program</a>	Northern Virginia, Washington DC, Maryland
<a href="#">Arlington County Commuter Services Program</a>	Arlington County
<a href="#">City of Alexandria</a> Rideshare	City of Alexandria
<a href="#">Fairfax County RideSources</a>	Fairfax County
<a href="#">Loudoun County Rideshare</a>	Loudoun County
<a href="#">Northern Neck Rideshare</a>	Lancaster, Northumberland, Richmond, and Westmoreland Counties
<a href="#">PRTC OmniMatch</a> (Potomac and Rappahannock Transportation Commission)	City of Manassas; Prince William County
<a href="#">GWRideConnect</a>	Fredericksburg, Stafford, Spotsylvania, Caroline and King George counties
<a href="#">Commuter Services (Rappahannock-Rapidan Regional Commission)</a>	Fauquier, Rappahannock, Culpeper, Orange, and Madison Counties
<a href="#">VCAP</a> (Valley Commuter Assistance Program)	City of Winchester; Clarke, Frederick, Page, Shenandoah, and Warren Counties
<b>Non-Northern Virginia Organizations</b>	<b>Service Area</b>
<a href="#">HRT Traffic</a>	Cities of Chesapeake, Franklin, Hampton, Newport News, Norfolk, Poquoson, Portsmouth, Suffolk, Tappahannock, Urbanna, Virginia Beach, West Point, Williamsburg; Accomack, Essex, Gloucester, Isle of Wight, James City, King & Queen, King William, Mathews, Middlesex, Northampton, Southampton, and York Counties
<a href="#">RideShare (Thomas Jefferson Planning District Commission)</a>	City of Charlottesville, and the counties of Albemarle, Fluvanna, Greene, Nelson, and Louisa.
<a href="#">Middle Peninsula Planning District Commission</a>	Essex, Gloucester, King & Queen, King William, Mathews and Middlesex Counties
<a href="#">RideFinders (GRTC)</a>	Central Virginia (Greater Richmond locations such as Brandermill, Chester, Chesterfield, Colonial Heights and Midlothian. Long-distance commuting is also available to Washington D.C. and Blackstone and from Hampton, Williamsburg, Fredericksburg and Orange, Virginia.)
<a href="#">RIDE Solutions</a>	Roanoke Valley and surrounding areas in southwest Virginia

### **Questionnaire Design and Survey Administration**

The questionnaire for the survey was based on the questionnaire used for the MWCOG SOC survey, with some questions added, deleted, or modified to meet VA SOC goals. To shorten the survey, some survey questions were asked of a sub-set of respondents, resulting in smaller completed survey counts for these questions. Prior to conducting the survey, the survey research team completed a pretest of the questionnaire. Minor changes were made to the questionnaire after the pretest and the questionnaire was translated into Spanish. The survey instrument was designed for telephone administration using Computer Assisted Telephone Interviewing (CATI).

To ensure that Northern Virginia residents were represented in the questions that were added after the MWCOG survey was completed, a brief supplemental Northern Virginia Callback Survey was conducted with a random sample of 520 of the 3,050 Northern Virginia residents who completed the MWCOG survey. Responses to these call-back surveys were matched to the responses for these respondents to the MWCOG survey questions to provide consistent data across the state.

### **Survey Data Expansion**

Survey responses to the VA SOC survey were expanded numerically to align the survey results with the total number of employed residents statewide. Published employment information from the Bureau of Labor Statistics (BLS), Local Area Unemployment Statistics (LAUS) for each of the survey's 16 sample areas was used to estimate the number of workers in each regional area. Additionally, the 2000 U.S. Census statistics were used to adjust the survey results for the distribution of race/ethnicity in Arlington, Middle Peninsula, and Roanoke.

## **SURVEY RESULTS**

This section of the report presents the key findings of the survey. The survey data were expanded to represent the total number of employed people in each region of the state. The results displayed in the report show expanded percentages. But the figures and tables also indicate the number of respondents (e.g., n=\_\_) who answered the question. Some of the results present comparisons of “Northern Virginia,” the five Virginia counties located in the Washington metropolitan region, with “Other Virginia,” which includes all counties located outside this region.

The results presented include the following.

- Profile of Virginia commuters’ travel
- Travel characteristics commuters consider in choosing commute mode
- Commuter satisfaction
- Ease of commute and recent changes in commute
- Telework
- Availability and use of transportation facilities
- Availability and use of commute assistance services
- Employer incentives that support use of alternative modes
- Importance of future investment in alternative transportation

### **Profile of Virginia Commuters’ Travel**

A primary function of the VA SOC survey was to define how Virginia commuters travel. The survey included questions on the types of transportation commuters used to travel to work, use of telework and other “non-travel” options, and commute distance and time.

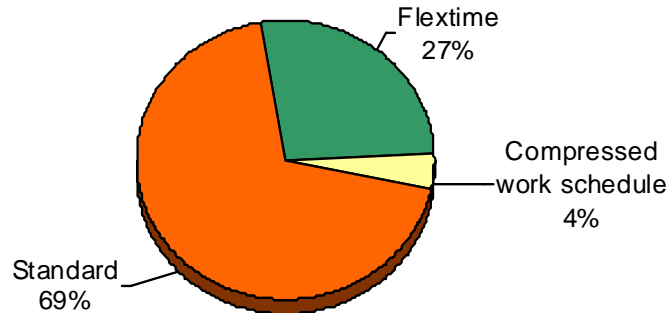
#### **Work Hours**

In 2007, Virginia was home to nearly 3.9 million workers. About 86% of these workers were employed full-time, defined as working 35 or more hours per week. The remaining 14% worked part-time.

Figure 2 shows the distribution of respondents’ work schedules. Almost seven in ten (69%) said they worked a “standard” schedule, defined as five days per week. Of those who worked a “non-standard” schedule, the most common was flextime or flexible work hours, used by 27% of respondents. Compressed work schedules, in which commuters work a full-time schedule in fewer than five days per week, were used by about 4% of respondents.

**Figure 2**  
**Non-Standard Schedule Types Used**

(n = 6,568)



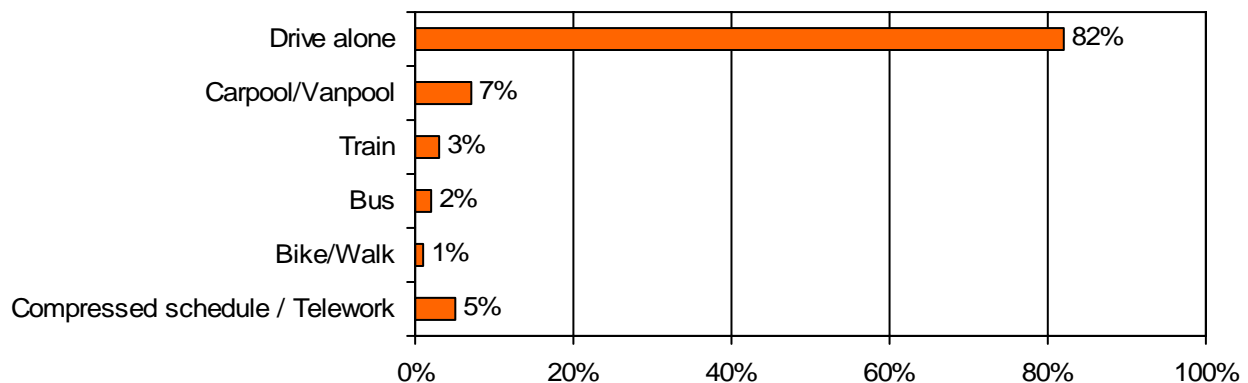
### **Travel Mode to Work**

About 92% of the residents surveyed said they traveled one or more days per week to a work location outside their homes. These respondents were asked what types of transportation they used to travel to work each weekday (Monday-Friday) during the survey week. Respondents who were absent from work one or more of their regular workdays during the survey week were asked to report how they likely would have traveled if they had worked on those days.

Figure 3 presents the distribution of travel modes as a percentage of weekly work trips. Five traditional transportation mode groups are shown: drive alone, carpool/vanpool, bus, train (subway/commuter rail), and bike/walk. The figure also includes one additional “mode group,” compressed work schedule and telework. These are not actually travel modes, but days these options are used are officially assigned work days, so they are included to show the percentage of weekly work trips eliminated through use of these work schedule options.

**Figure 3**  
**Weekly Commute Trips by Types of Transportation Used for Commuting**

(n = 6,356)





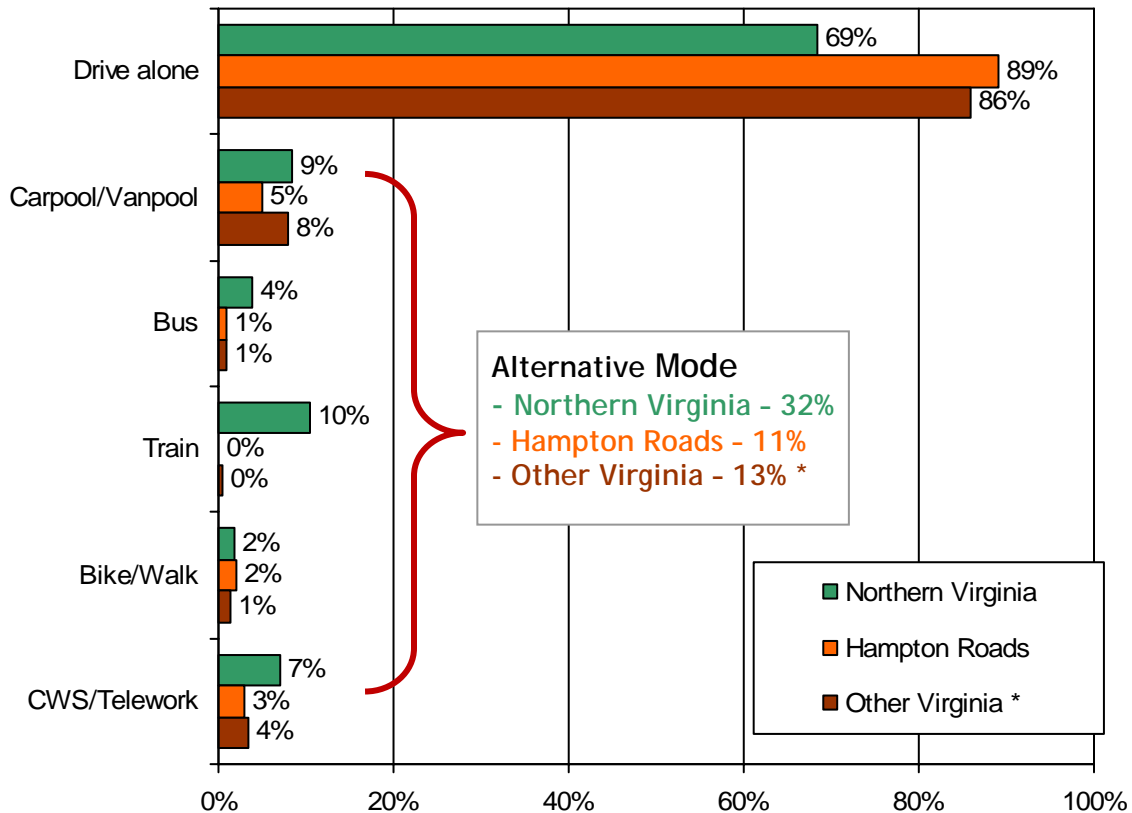
Driving alone was, by a large majority, the most common mode; more than eight in ten weekly commute trips were made by driving alone. The remaining 18% were made by non-drive alone “alternative modes,” such as carpooling and public transportation. Carpooling and vanpooling accounted for about 7% of trips, slightly edging transit, which was used for 5% of weekly trips (train 3% and bus 2%). About 1% of weekly commute trips were made by walking or bicycling.

Compressed work schedule (CWS) days off and teleworking accounted for 5% of weekly work “trips.” The CWS and percentage is notable, because it represented trips eliminated from the daily commute time, reducing congestion and saving fuel. On a typical day, 70,000 trips are eliminated across Virginia through use of these two work arrangements.

### **Travel Mode to Work – Northern Virginia vs. Other Virginia**

The percentage of weekly work trips made by alternative modes was considerably higher than 18% in Northern Virginia, as illustrated by Figure 4. Nearly a third (32%) of weekly trips in this region were made by carpool/vanpool (9%), train (10%), bus (4%), bike/walk (2%), or compressed schedules/telework (7%). Only 69% of trips were drive alone trips.

**Figure 4**  
**Weekly Commute Trips by Types of Transportation**  
(Northern Virginia n = 2,798, Hampton Roads n = 580, Other Virginia\* n = 3,210)



\* - other Virginia, excluding Hampton Roads

Use of alternative modes was less common in Hampton Roads and other regions outside the highly urbanized Northern Virginia area. Carpool/vanpool rates were not dramatically different in various regions, but bus and train were used for only 1% of total weekly trips outside of Northern Virginia. Bike/walk and compressed schedules/telework accounted for 1% and 4% of trips, respectively. The drive alone rate for Hampton Roads was 89% and 86% for Other Virginia areas.

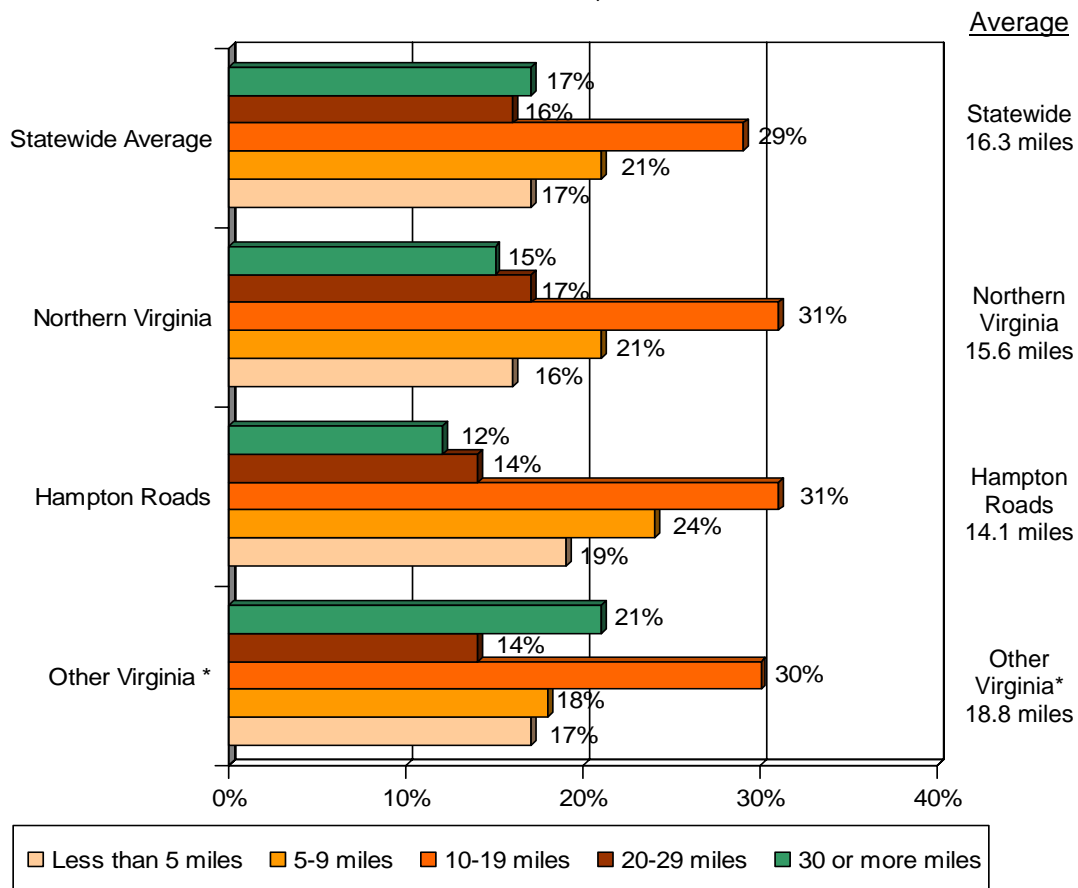
Among Other Virginia regions, only Fredericksburg had an alternative mode rate that rivaled Northern Virginia's 31%. In Fredericksburg, 27% of work trips were made by alternative modes. Carpool/vanpool was particularly prominent; 16% of work trips made by Fredericksburg residents were in a carpool or vanpool. Alternative mode use was 16% or less in all "Other Virginia" regions.

### **Length of Commute**

Commuters had a wide range of commute distances, ranging from less than one mile to more than 100 miles. Figure 5 presents the distribution of distance for all Virginia commuters and for commuters who live in Northern Virginia, Hampton Roads, and Other Virginia areas.

**Figure 5**  
**Commute Distance (one-way miles)**

(Statewide n = 6,012, Northern Virginia n = 2,504, Hampton Roads n = 541, Other Virginia\* n = 2,967)



\* - other Virginia, excluding Hampton Roads

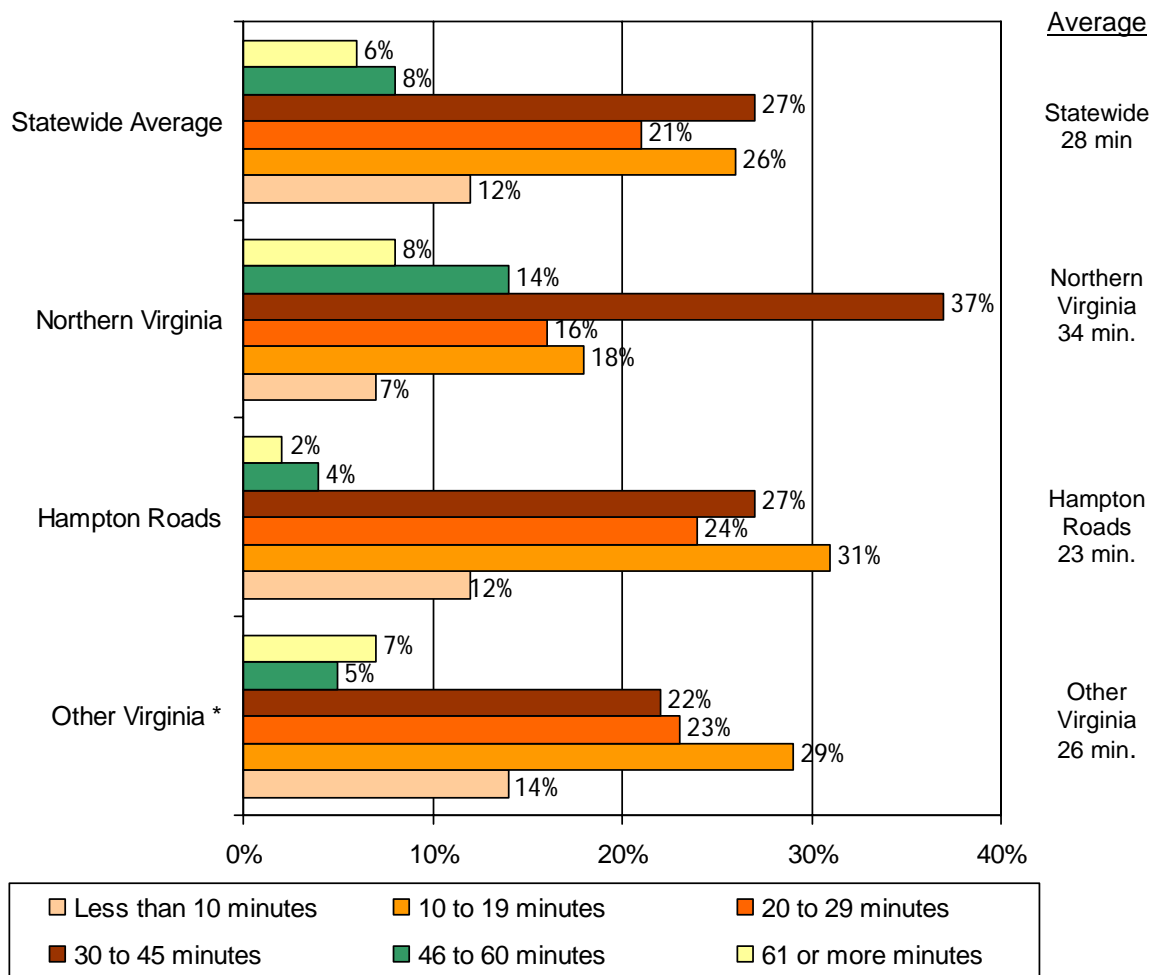
The average one-way distance statewide was 16.7 miles, slightly longer than the national average of 16 miles, as measured by a 2007 ABC news poll of commuters. As shown in Figure 6, 38% of respondents commuted fewer than 10 miles one-way. Three in ten (29%) said they traveled between 10 and 19 miles and 17% had commute distances of 30 miles or more.

Respondents who lived in Northern Virginia and Hampton Roads traveled shorter distances to work, averages of 15.6 miles and 14.1 miles one-way, while residents of Other Virginia areas traveled farther than the statewide average, about 18.8 miles one-way.

Survey respondents commuted, on average, about 28 minutes one-way. As shown in Figure 6, nearly four in ten (38%) respondents commuted fewer than 20 minutes and 48% commuted between 20 and 45 minutes. The remaining 14% traveled more than 45 minutes.

**Figure 6**  
**Commute Distance (minutes)**

(Statewide n = 6,293, Northern Virginia n = 2,678, Hampton Roads n = 558, Other Virginia\* n = 3,057)



\* - other Virginia, excluding Hampton Roads

The commute time distribution was strikingly different in Northern Virginia than in other areas of the state. Although they traveled fewer miles than the statewide average, Northern Virginia commuters had longer travel times (34 minutes) than the statewide average (28 minutes). The longer commute time for Northern Virginia is likely the result of both higher levels of traffic congestion, leading to slower highway speeds for commuters who drive, and the higher share of trips made by public transit. Transit trips typically take longer per mile than do driving trips.

By comparison, residents of Other Virginia areas traveled more miles than the statewide average, but in a shorter amount of time (26 minutes). Hampton Roads commuters traveled both shorter distances and shorter times (23 minutes) than the statewide average.

### **Travel Characteristics Commuters Consider in Choosing Their Commute Mode**

The location of commuters' homes and workplaces and the options available to them for commuting are obvious factors in commuters' travel choices. But commuters consider other factors also. The VA SOC survey provided new information on what mode and commuting characteristics influenced commuters' choice of travel modes and how commuters feel about their commutes.

Survey respondents were asked how important safety, reliability, and other travel characteristics had been in their choice of type of transportation used to get to work. Respondents rated each factor on a scale of "1" to "5" where "1" meant it was "not at all important" and "5" meant it was "very important." Figure 7 presents the percentages of respondents statewide who rated each factor's importance as a 4 (somewhat important) or 5 (very important). These results are portrayed in Figure 7.

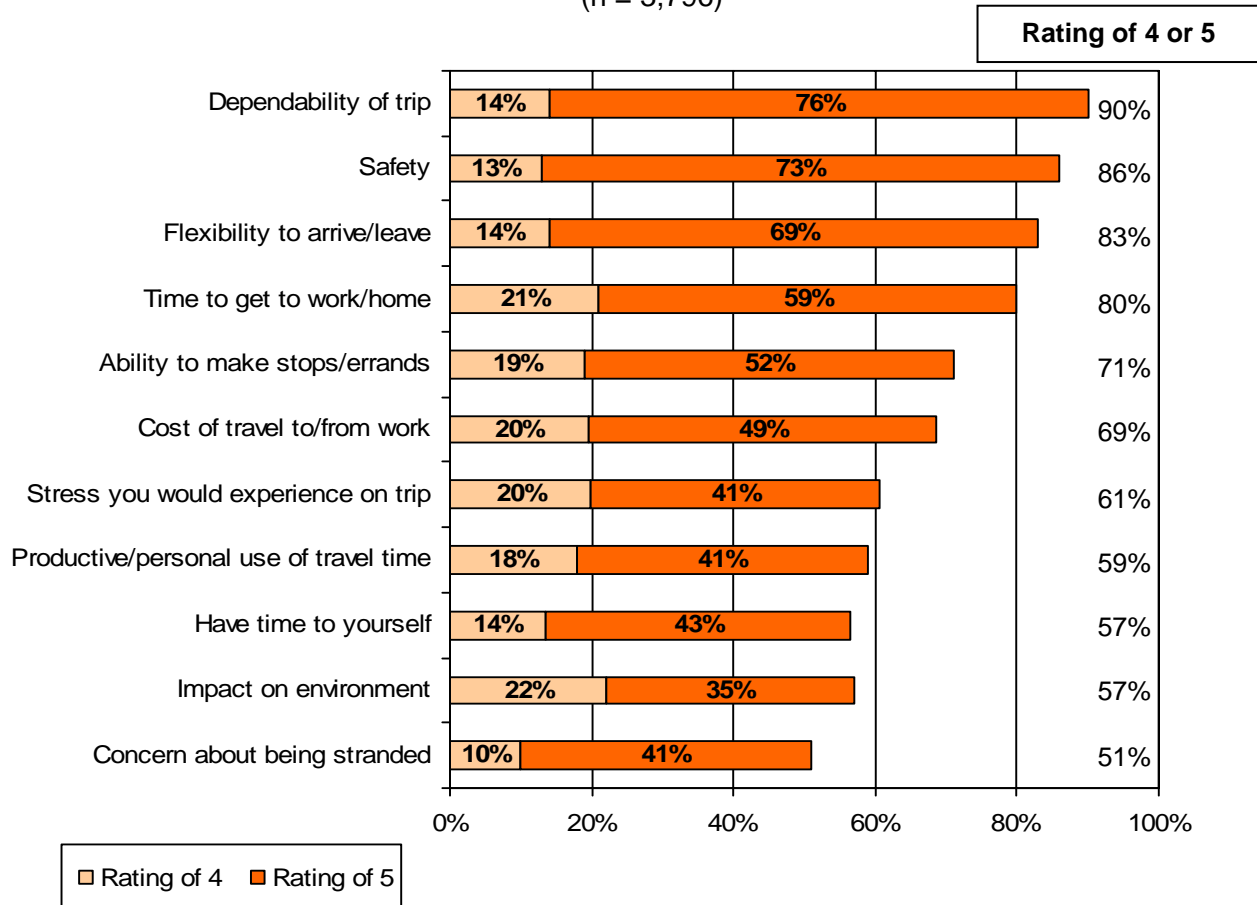
The most important factor was dependability of the trip; fully 90% of the respondents reported that this was at least somewhat important and three-quarters of respondents said it was very important. Other highly rated factors included safety, flexibility to arrive and leave work when needed, and the travel time needed to get to work or get home from work; at least eight in ten respondents said these factors were somewhat important or very important in their choice of commute mode.

The importance of these attributes has been documented in other research in Virginia. The *Dulles Corridor Metrorail Project Impact Research* (2006), for example, reported that more than 9 of 10 commuters said that "dependability" was important in their commute choices.

Two factors, the ability to make stops or run errands during the commute trip or at other times of the day (71%) and the cost of travel (69%) were rated 4 or 5 by about seven in ten respondents. Other factors received 4 or 5 ratings from between 51% and 61% of respondents.

**Figure 7**  
**Importance of Factors in Choosing Commute Mode – Percent Rating Importance a 4 or 5**

(n = 3,796)



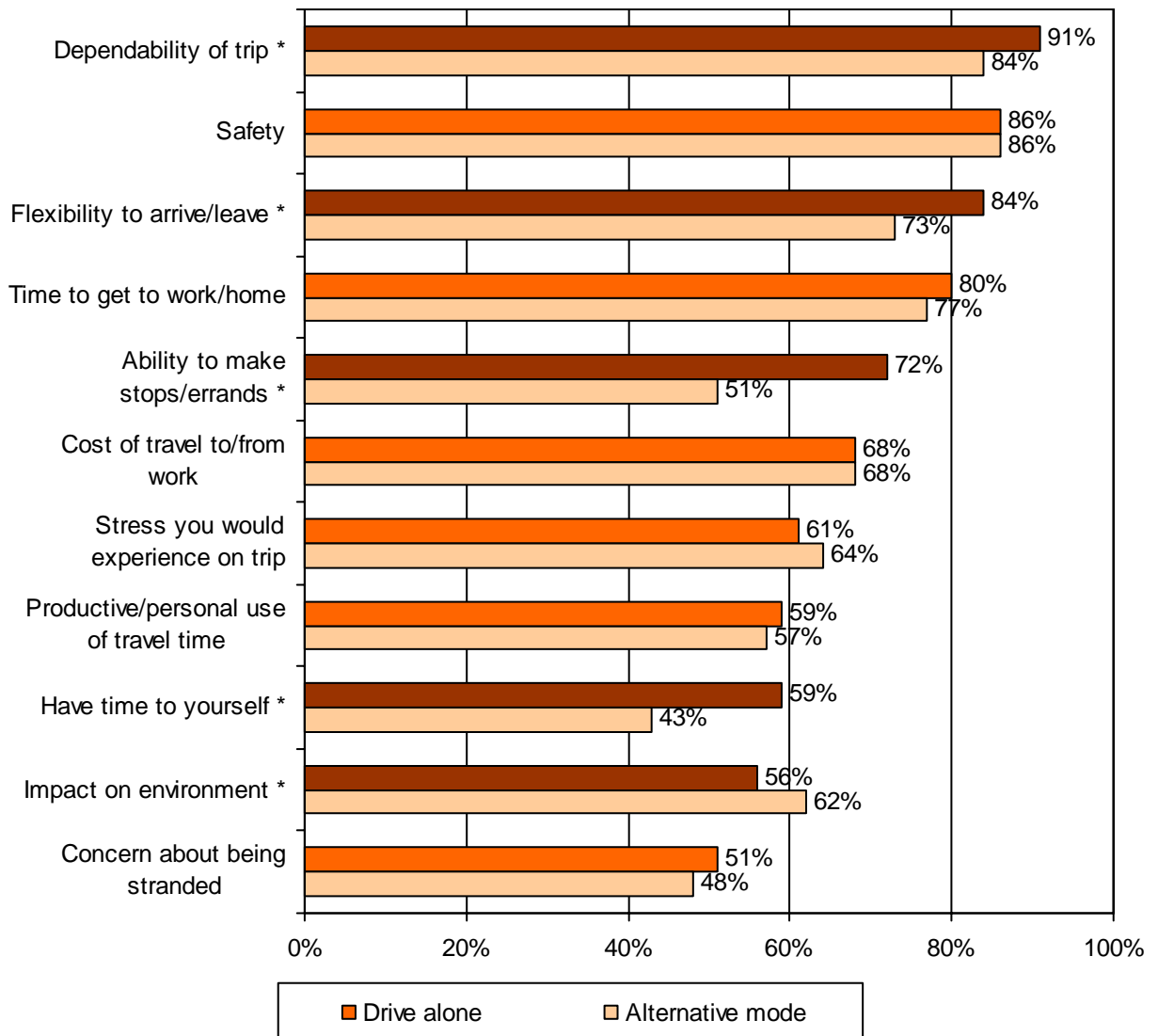
It was expected that respondents who used different types of transportation for commuting might rate the importance of travel characteristics differently. Figure 8 shows the same factors with the ratings given by two groups of respondents – those who primarily drive alone to work and those who primarily use an alternative mode for their commute.

As is clear from the figure, commuters gave similar importance ratings for many factors, regardless of the type of transportation they used to get to work. Factors in which the ratings were not statistically different included: safety, time to get to work/home, cost of travel, stress experienced on the commute trip, desire for productive or personal use of commute time, and concern about being stranded.

Respondents gave statistically different ratings on five travel characteristics. Respondents who primarily drove alone gave higher importance than those who used alternative modes to dependability of the trip, flexibility to arrive or leave work when needed, the ability to make stops or errands on the commute trip, and the desire to have time to oneself. By comparison,

respondents who primarily used an alternative mode reported higher importance for the impact that their commute would have on the environment than respondents who drove alone.

**Figure 8**  
**Importance of Factors in Choosing Commute Mode – Percent Rating Importance a 4 or 5**  
**Respondents who Primarily Drive Alone and Respondents who Primarily Use an Alternative Mode \***  
 (Drive alone n = 2,663, Alternative Mode n = 359)



\* Statistically different responses at 95% level

**Reasons for Using or Not Using Alternative Modes**

To learn more about perceived advantages of alternative modes, respondents who used these modes were asked how important various travel characteristics had been in their decision to use these modes. To learn more about perceived barriers to alternative mode use, respondents who drove alone to work were asked how important various factors had been in their decision not to use alternative modes. These results are shown in Tables 1, 2, and 3.

Reasons for Using Alternative Modes – Respondents chose alternative modes primarily to save time, save money, be less stressed, or to reduce pollution. More than seven in 10 alternative mode users rated “save time using a high-occupancy vehicle (HOV) lane” or “lower transportation cost” either a 4 or 5 in importance in their mode choice. About two-thirds gave a 4 or 5 rating to wanting to “reduce commute stress,” or “help reduce pollution.”

**Table 2**  
**Alternative Mode Users’ Reasons to Use Alternative Modes**  
**Percentage Reporting Importance of 4 or 5**

(n = 489, HOV n = 77)

Reason	Percentage
Save time using HOV lane	73%
Lower transportation cost	72%
Be less stressed	67%
Help reduce pollution	64%
Would not have to find parking	44%
Use commute time for personal use	43%
Use commute time for productive work	41%
Have companionship	40%

Reasons for Not Using Alternative Modes – As indicated by Table 3, respondents who drove alone said they did not use alternative modes because they perceived that these modes were not available when and where they needed to travel, would not offer the flexibility they needed in their travel, would not offer a time advantage over driving alone, or simply were not their preference, relative to driving alone.

Seven in 10 respondents said they did not have a bus or train option between home and work at the time they needed to commute. The question about barriers to transit was asked only of respondents who said that transit operated in their home area, so either service did not operate at all during their commute time or did not operate on a frequent enough schedule to meet their commute time preference. About two-thirds of respondents said lack of availability was their reason for not carpooling/vanpooling; 64% said not being able to find a pool that matched their work hours and location was a somewhat or very important barrier.

**Table 3**  
**Drive Alone Users' Reasons NOT to Use Transit and Carpool/Vanpool**  
**Percentage Reporting Importance of 4 or 5**

<b>Reason</b>	<b>Transit (n = 831)</b>	<b>Carpool/Vanpool (n = 1,722)</b>
<b>Mode Availability Reasons</b>		
Bus/train does not go to workplace at commute time	72%	-----
Can't find pool that matches work hours and work location	-----	64%
<b>Flexibility / Personal Preference Reasons</b>		
Need to be able to leave work during day	77%	73%
Need to be able to make stops/run errands on commute trip	68%	64%
Like driving myself	66%	62%
Like riding alone	46%	-----
Don't like riding with strangers	41%	43%
<b>Time or Cost Reasons</b>		
Would take longer	72%	-----
Would not reduce travel time	69%	60%
Would not save money	50%	44%

The top perceived barrier overall was travel flexibility. About three-quarters of drive alone respondents rated the need to be able to leave work during the day a 4 or 5 for why they do not use transit (77%) or a carpool/vanpool (73%). Respondents also said using transit or carpool/vanpool would hinder their ability to make stops or run errands on the way to or from work (transit – 68%, carpool/vanpool – 64%). About two-thirds said they did not use alternative modes because they liked driving themselves. Two related reasons, “liked riding alone” and “don't like to ride with strangers,” were less important, rated as 4 or 5 by fewer than half of drive alone respondents.

About seven in 10 respondents rated a time concern, either “would take longer” or “would not reduce travel time” as a somewhat or very important reason not to use transit. “Would not reduce travel time” was rated by 60% of respondents as an important reason not to carpool/vanpool. Cost did not appear to be as much of an issue, but half (50%) of respondents rated “would not save money” an important reason for not using transit and 44% rated this reason as important in their choice not to carpool/vanpool.



## **Commuter Satisfaction**

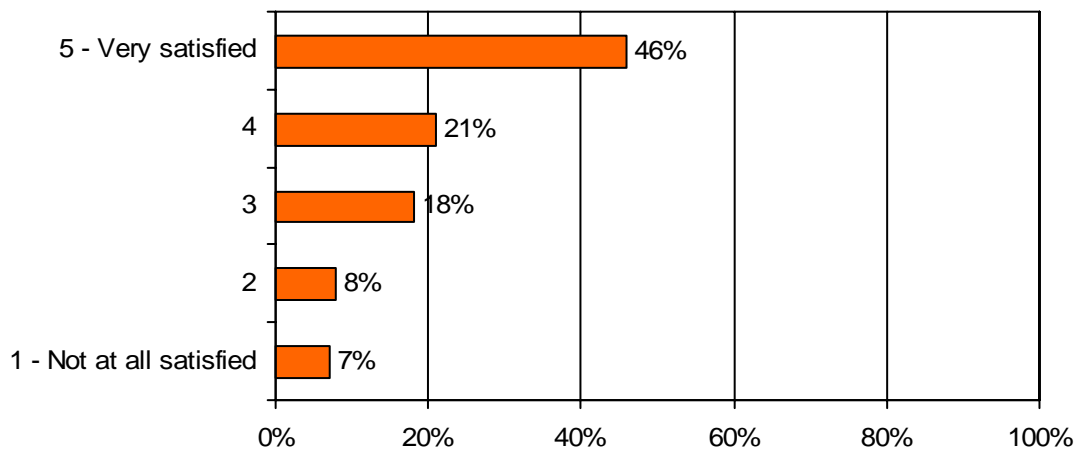
About two-thirds of Virginia commuters were satisfied with their commutes, but their level of satisfaction was influenced by many factors. The time it takes to get to work and the general ease of the trip were among the most important factors; commute satisfaction rose as the length of trip got shorter and satisfaction increased as commute difficulty dropped. Commuters also reported higher commute satisfaction when the trip cost less, was less stressful, was more dependable and felt safer.

Commuters have only a limited ability to change some of these factors, but commuters who used alternative modes for commuting reported distinct advantages in several of these characteristics. Two-thirds said using an alternative mode saves them money and reduces the stress of commuting. And commuters who could use a High-Occupancy Vehicle (HOV) or carpool lane on their trip save time, a very important factor in their commute satisfaction.

### **Overall Satisfaction – Statewide and by Region**

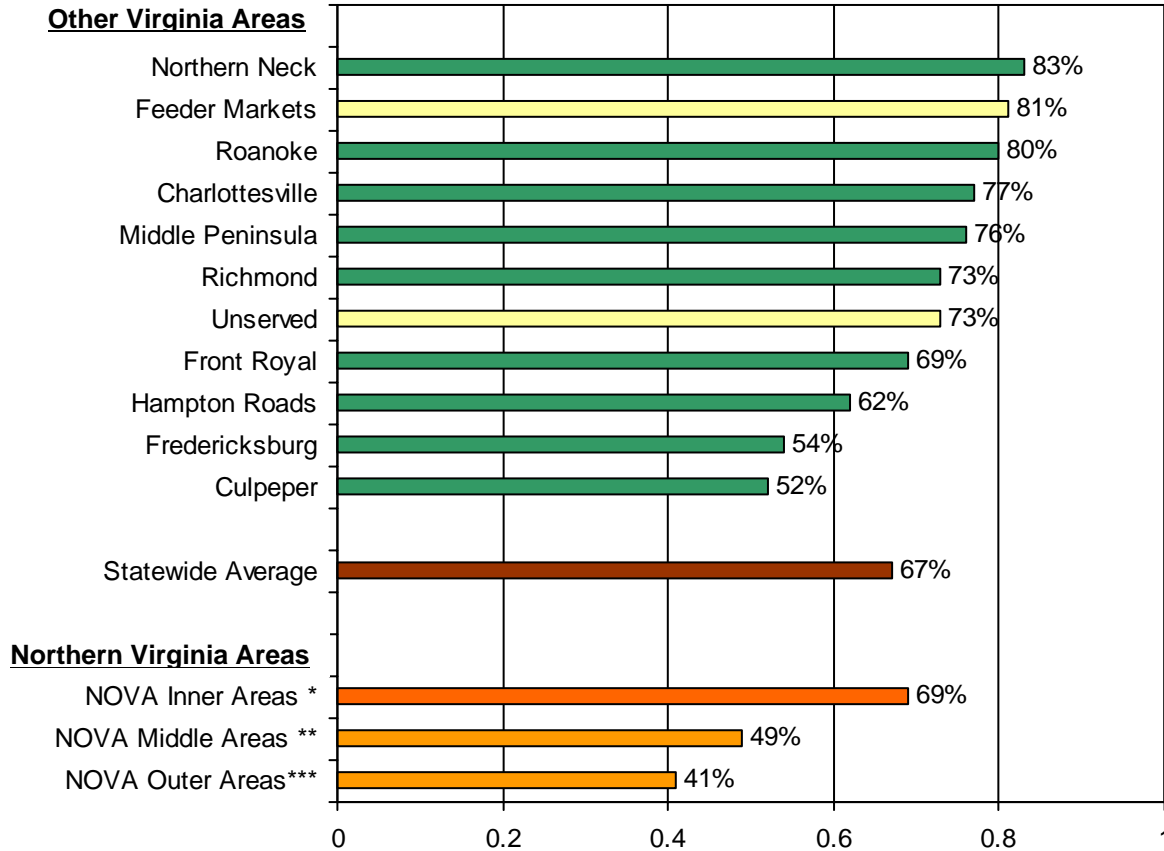
Two-thirds (67%) of Virginia commuters said they were satisfied with their commute overall. As shown in Figure 9, 46% rated their commute a 5 on a scale of 1 to 5 where 1 means not satisfied at all and 5 means very satisfied. Another 21% rated their commutes a 4. Only 15% said their commutes rated a very low score; 7% gave a rating of 1 (not at all satisfied) and 8% gave a rating of 2.

**Figure 9**  
**Overall Satisfaction with Commute – Scale of 1 to 5 Rating**  
(n = 3,253)



Commute satisfaction varied widely by where commuters lived. Figure 10 presents the percentages of commuters in each of the 16 Virginia areas who gave a rating of 4 or 5 for commute satisfaction. The top of the figure shows the Other Virginia regions, arranged in the figure from highest to lowest satisfaction rating. The bottom section of the figure shows three NOVA areas, Inner (Alexandria and Arlington), Middle (Fairfax), and Outer (Loudoun and Prince William). The statewide average of 67% is also shown. Nine of the regions were above the statewide average and five were below the average.

**Figure 10**  
**Overall Satisfaction with Commute – Percent Rating Commute a 4 or 5**  
**By Region**



\* - NOVA Inner Areas – Alexandria City and Arlington County

\*\* - NOVA Middle Areas – Fairfax County

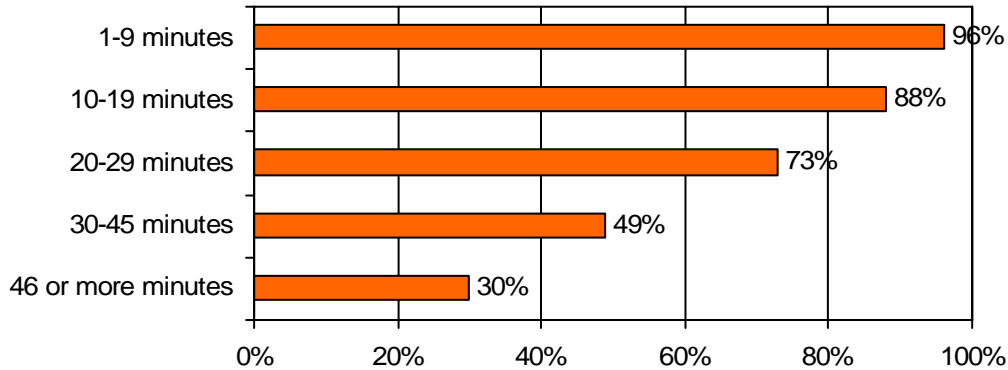
\*\*\* - NOVA Outer Areas – Loudoun County and Prince William County

Satisfaction was higher than average in rural areas, such as the Northern Neck, Middle Peninsula, feeder markets, unserved areas and smaller cities, such as Roanoke and Charlottesville. Commute satisfaction was lower than average in more urbanized parts of the state, particularly in Northern Virginia. Of the five areas with below average satisfaction, two were located in Northern Virginia and two (Fredericksburg and Culpeper) were adjacent to Northern Virginia.

Commute satisfaction declined dramatically as commute length increased. As shown in Figure 11, 96% of commuters who had very short commutes – less than 10 minutes – gave a 4 or 5 rating for satisfaction. When the commute was between 10 and 19 minutes, only 88% were satisfied. At 20 to 29 minutes, satisfaction dropped still further; only 73% gave a 4 or 5 rating. Only half of commuters who traveled 30 to 45 minutes were satisfied. And when travel time exceeded 45 minutes, only three in 10 said they could rate their commute a 4 or 5.

**Figure 11**  
**Overall Satisfaction with Commute – Percent Rating Commute a 4 or 5**  
**By Length of Commute in Minutes**

(1-9 min n = 380, 10-19 min n = 809, 20-29 min n = 662, 30-45 min n = 796, 46 or more min n = 534)



### **Ease of Commute and Recent Changes in Commute**

Commute satisfaction was related to how easy or difficult it was to make the trip. Dissatisfaction with commuting and the ease of the commute also could motivate commuters to take actions to try to make the commute less difficult. The VA SOC survey examined these questions.

The survey results showed ongoing interest in and a fluid market for alternative mode use. Nearly half of Virginia commuters who used alternative modes for commuting started using these types of transportation within the past two years and 69% of those who made a switch shifted from driving alone.

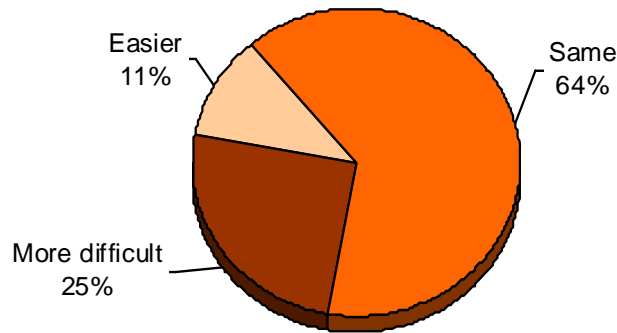
Some of these shifts might have been motivated by a desire to make commuting easier. A quarter of respondents said their commute was more difficult than it had been a year earlier, primarily because congestion was getting worse. Commuters who used or tried alternative types of transportation primarily did so to save money, save time, or avoid driving / traffic congestion.

### **Ease of Commute Compared to Last Year**

Respondents who did not telework or work at home all the time were asked how their commute compared to a year before – was it easier, more difficult, or about the same as a year ago? As seen in Figure 12, a quarter (25%) said their commute was more difficult than a year ago. One in 10 (11%) said it was easier. The remaining 64% of respondents said their commute was about the same.

An overwhelming majority (74%) of respondents who said their commute was more difficult said their route had become more congested. About a tenth of respondents said either the distance was longer (11%), it was a slower/trip or it took more time (10%). A tenth of respondents with a more difficult commute cited road construction occurring along the route as the reason.

**Figure 12**  
**Commute Easier, More Difficult, or Same as Last Year**  
 (n = 5,513)

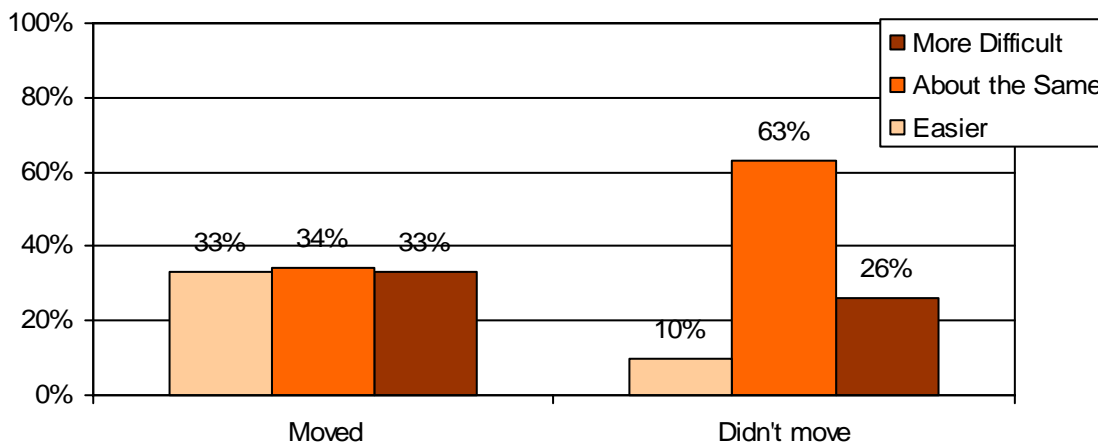


The primary reason mentioned by respondents who had an easier commute was that the trip was shorter (39%), presumably because the respondent changed either a work or home location. Slightly more than a quarter said the route they used was less congested (28%) and another 26% said the trip was faster. Seven percent said it was easier because road construction along the route had been completed.

### **Commute Ease as a Factor in Location Changes**

For some respondents, commute ease appears to have been related to changes in home and work location. About 17% of respondents said they had changed either their home or work location within the past year. As illustrated in Figure 13, a much higher percentage of respondents who made a move said their commute was easier (33%) than did respondents who had not made a location change (10%).

**Figure 13**  
**Ease of Commute Compared to Last Year by Moved Residence or Work Location**  
 (Moved n = 971, Did not move n = 4,927)



Respondents who moved also were more likely to say their commute had gotten more difficult; a third who moved experienced a more difficult commute, compared to a quarter of those who had not moved. Thus a move might have played a role in either improving or worsening a commute, but the move more often improved the commute.

Recent anecdotal reports have suggested that some commuters might move their residences and/or seek new jobs in part to make their commute easier or to save money. Respondents who made a location change were asked what factors they considered in making the change and how important commuting factors were, relative to other factors they considered.

The *Virginia Beach Impact Study* (2006), for example, reported that 15% of commuters would consider changing their residence if the length of their commute increased by 30 minutes.

Table 4 shows that 47% of respondents named one or more job/career factors, such as career advancement, job satisfaction or income as important to their decision to change work or home location. Three in 10 named a residential factor, such as the size of the residence, quality of the neighborhood or cost of living. But nearly two in 10 (18%) named a commute-related factor as one that they considered in the moving decision. Length or ease of commute was cited by 16%; smaller percentages said the cost of commuting or the range of commuting options available at the new location had been a factor.

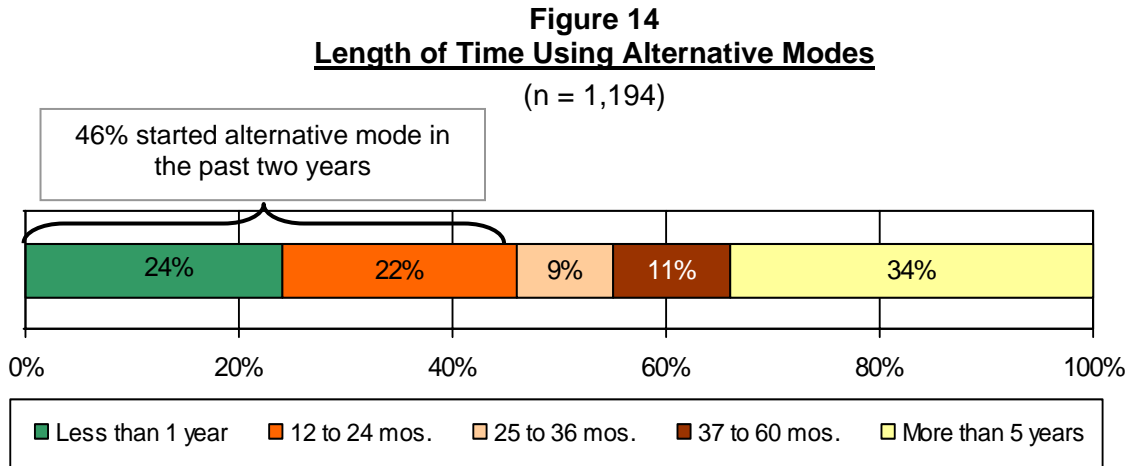
**Table 4**  
**Factors Considered in Home or Work Location Changes**  
Respondents Who Made a Change in Work or Residence Location  
(n = 973, multiple responses permitted)

Location Change Decisions	Percentage
Job/career factors	47%
Residential factors	30%
Commute factors	18%
- Length or ease of commute	16%
- Cost of commuting	3%
- Commuting options that would be available	2%

Respondents who made location changes also were asked how important commuting factors had been in their decision, relative to the other factors they considered. A quarter (25%) said the commute factors were more important than the others, half (49%) said they were about equally important and 26% said commuting factors were less important.

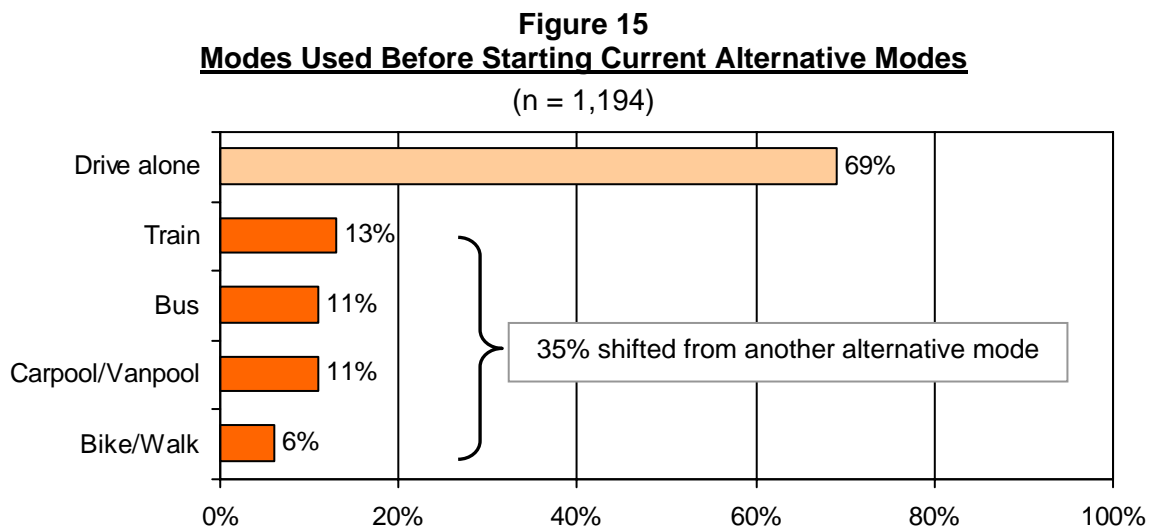
## Changed Mode or Tried New Mode in Past Year

Respondents who used an alternative mode of transportation to get to work at the time of the survey were asked how long they had been using this type of transportation and what types of transportation they used before starting their current mode. Figure 14 presents the results to the first question.



A third of alternative mode respondents were long-time users and 34% had used their current alternative mode more than five years. But commuters continue to explore alternative mode options; nearly half (46%) of commuters who used alternative modes shifted to these modes within the past two years. This suggests an ongoing need to make commute information and services available to commuters, because commuters' travel patterns change in response to changes in their personal situations.

A sizeable portion of alternative mode users were converted from driving alone. As presented in Figure 15, 69% of respondents who changed modes shifted from driving alone. A third (35%) of commuters who previously used alternative modes used a different alternative mode; 13% previously rode a train, 11% rode a bus, and 11% carpooled or vanpooled before switching to their current alternative mode. Six percent said they previously bicycled or walked to work.



\* Adds to more than 100% because multiple previous modes were permitted

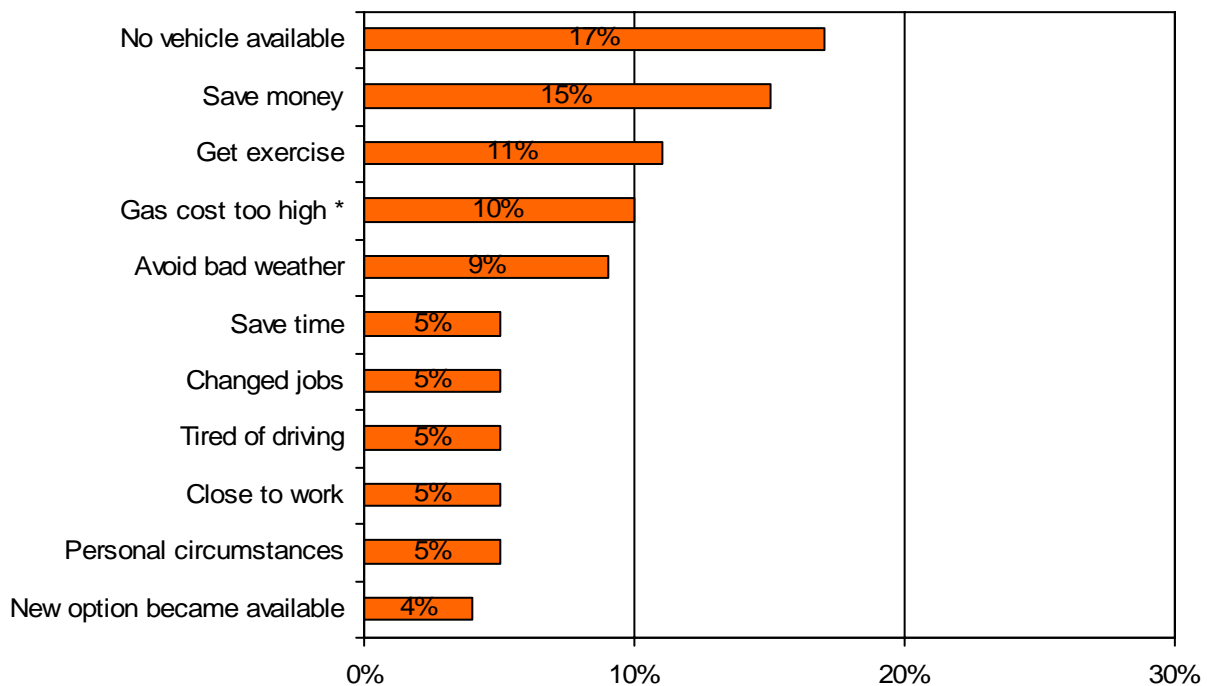
Commuters who used or tried an alternative mode did so primarily to save money, reduce commute costs (25%) or because they made a job or home location change (25%). Other reasons cited included: did not have access to a vehicle for regular commute use (9%), save time (9%), changed jobs or moved home location (6%), tired of driving (3%) or avoid congestion (3%).

**Other Alternative Modes Tried** – The survey also explored trial use of alternative modes. Respondents who were driving alone at the time of the survey were asked if they had used or tried an alternative mode for their commute within the past two years. Respondents who were using an alternative mode when the survey was conducted were asked if they had used an-other alternative mode, other than the mode they were currently using.

About 8% of commuters tried or used a new alternative mode for commuting in the past two years. About 3% mentioned trying a train and 2% said they tried a bus. Two percent tried or used a carpool or vanpool and 2% tried bicycling or walking.

Commuters used or tried an alternative mode primarily because they did not have access to a vehicle for regular commute use (17%), to save money (15%) or to reduce gas expenses (10%). Other reasons cited were to get exercise (11%), avoid driving during bad weather (9%), save time (5%), changed jobs or moved home location (5%), or tired of driving (4%). Figure 16 shows these results.

**Figure 16**  
**Reasons for Using/Trying Alternative Modes in Past Two Years**  
(n = 686)



\* Note that the survey was conducted between May and July 2007. The average gas price in Virginia at this time was about \$2.90 per gallon.

## **Telework**

Twelve percent of Virginia commuters indicated that they teleworked, at least occasionally. This equates to approximately 440,000 telecommuters, using the expansion factors outlined on page four of this document. (The expansion factors involve weighting the data according to the number of employed residents of each county/city according to the Bureau of Labor Statistics. Weights are also applied for race/ethnicity in Arlington, Middle Peninsula, and Roanoke based to 2000 U.S. Census statistics.) Nearly half (45%) of these commuters who telework began doing so in the past three years, suggesting that the use of teleworking is growing. The growth of teleworking is well documented in Northern Virginia. Telework data were collected for that area in 2004. The 2007 telework percentage is 50% above the 2004 level.

Use of telework eliminates one in 20 commute trips from Virginia roads each commute day. Telework appears to offer a significant additional potential to reduce commuting trips and commuting miles; an additional 20% of commuters statewide said they have job responsibilities that they could perform away from their main work place and that they would telework if given the opportunity.

Commuters' occupations and the types and sizes of employers for which they worked appeared related to their likelihood to telework. Occupations with higher than average teleworking rates included executive/managerial (17%), professional (16%), business/financial operations (technicians) (16%), and sales (15%).

### **Telework Definition**

The 2007 VA SOC survey is the first survey to collect data on teleworking in Virginia. Teleworkers, as defined for this survey, are *"wage and salary employees who at least occasionally work at home or at a telework or satellite center during an entire work day, instead of traveling to their regular work place."*

Note that this definition counts only telework that eliminates trips commuters would otherwise make to an outside job location. It excludes four groups of workers that are sometimes counted as teleworkers: 1) workers who are self-employed and have no other work location except their homes, 2) workers who are assigned to work at client sites outside their main work location, 3) workers, such as sales or equipment repair staff, who travel to customer locations during the course of the day, and 4) commuters who work a portion of the workday at home but travel to the regular workplace for another part of the day. These situations are not generally considered teleworking for transportation-related purposes, thus were excluded in the VA SOC survey.

### **Current and Potential Teleworking**

Current Telework – Table 5 presents telework details Virginia statewide, Northern Virginia, and Other Virginia areas. About 440,000 Virginia workers met the definition of telework, using this option either regularly or occasionally. This equates to about 11% of all workers statewide. But teleworkers accounted for a slightly higher percentage, 12%, of all regional commuters, that is, workers who travel or could travel to a main work location on non-telework days.



Using this base of commuters excludes workers who are self-employed and who have no other work location. These workers might occasionally travel outside their homes for meetings or other business purposes, but do not make regular commute trips. The calculation of teleworkers as a proportion of commuters reflects a more realistic representation of the role that teleworking can have in eliminating commute trips. As noted before, 4% of weekly work trips are eliminated by telework. This equals about 127,200 daily work trips.

**Table 5**  
**Summary of Current Teleworking**

<b>Teleworking Status</b> Commuters (respondents who are not self-employed, and working only at home)	<b>Statewide</b> (n = 6,606)	<b>Northern Virginia</b> (n = 2,805)	<b>Other Virginia</b> (n = 3,801)
Currently teleworking			
- Percentage of commuters teleworking	12.0%	20.7%	8.5%
- Number of workers teleworking	440,100	216,900	223,200
- Weekly trips reduced by teleworking	127,200	63,900	64,300

As shown in the table, telework is much more common in Northern Virginia than in Other Virginia areas. More than two in 10 (20.7%) Northern Virginia commuters telework, compared to fewer than one in 10 (8.5%) in Other Virginia areas. Since the worker population is larger in Other Virginia, the total number of workers teleworking and the weekly trips reduced by teleworking are about the same for these two areas.

Although this is the first statewide survey documenting telework across all of Virginia, telework data were previously collected for the Northern Virginia region in the 2004 SOC survey conducted by MWCOG. These 2004 data provide a baseline against which the 2007 Northern Virginia results can be compared. In 2004, 13.2% of Northern Virginia commuters teleworked. The 2007 percentage of 20.7% represents a 50% increase in teleworking.

**Potential for Telework** – Commuters who said they did not telework were asked several questions to determine if telework might be a feasible option. First, they were asked if their job responsibilities could be performed at a location other than their main work place, at least occasionally. Those who said they “could” telework comprise about 27% of all commuters.

Respondents for whom telework was a possibility were asked if they were interested in telework, that is, they “would” telework if given the opportunity. Nearly three-quarters said they would be interested in telework on either an occasional basis (63%) or a regular basis (37%). These interested respondents equal about 20% of all commuters.

These results suggest telework could offer substantial additional potential for Virginia. Table 6 summarizes the telework potential. As noted before, 12% of Virginia commuters currently telework. But an additional 20% of commuters “could and would” telework, that is, they have job responsibilities that could be done while teleworking and they would be interested in teleworking, if given an opportunity. The remaining respondents said they would not be interested in teleworking (7%) or that their job responsibilities would not allow teleworking (61%).

**Table 6**  
**Summary of Potential Telework**

<b>Telework Status</b> Commuters (respondents who are not self-employed, and work only at home)	<b>Statewide</b> (n = 6,606)	<b>Northern Virginia</b> (n = 2,805)	<b>Other Virginia</b> (n = 3,801)
Not teleworking			
- Job compatible with telework and INTERESTED in telework ("could and would")	20%	25%	19%
- Job compatible with telework, but NOT INTERESTED in telework	7%	5%	8%
- Job NOT COMPATIBLE with telework	61%	49%	65%

The table also summarizes the potential telework percentages for Northern Virginia and for Other Virginia areas. Northern Virginia offers higher potential; 25% of commuters in this region are potential new teleworkers. In Other Virginia areas, about two in 10 (19%) commuters are potential teleworkers. The upper limit on teleworking in the two areas is largely driven by the compatibility of jobs common in these areas. As also shown in Table 6, 65% of Other Virginia commuters reported having job responsibilities that were not compatible with teleworking; in Northern Virginia, only half (49%) said they could not perform their jobs away from the main work place.

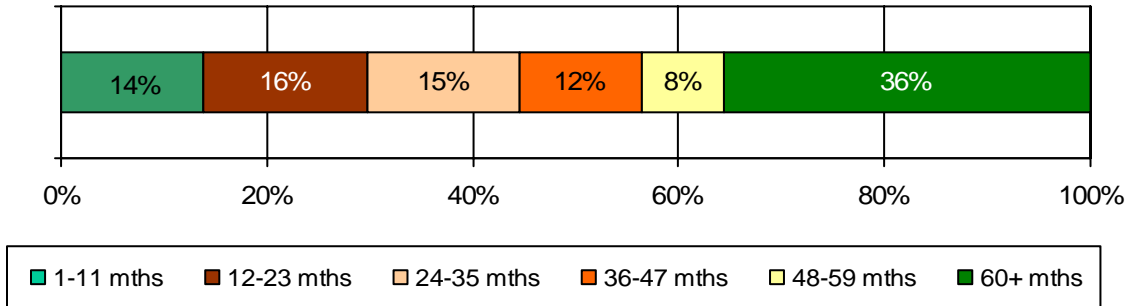
### **Telework Patterns**

Respondents who said they teleworked at least occasionally were asked a series of questions about their telework location, length of time teleworking, use of informal or formal telework arrangement, and frequency of teleworking.

Telework Locations – The overwhelming majority (94%) of teleworkers said they teleworked exclusively from home. A very few teleworkers named another telework location. Three percent mentioned a satellite office operated by their employers and 3% said they teleworked from a telework center, a commercial business center, or a combination of locations.

Length of Time Teleworking – Figure 17 shows the distribution of teleworkers by the time they've been teleworking. More than four in 10 (45%) teleworkers started teleworking less than three years ago and 14% started within the past year. This is consistent with the results presented earlier that showed substantial growth in telework in Northern Virginia between 2004 and 2007. About a third (36%) said they had been teleworking more than five years.

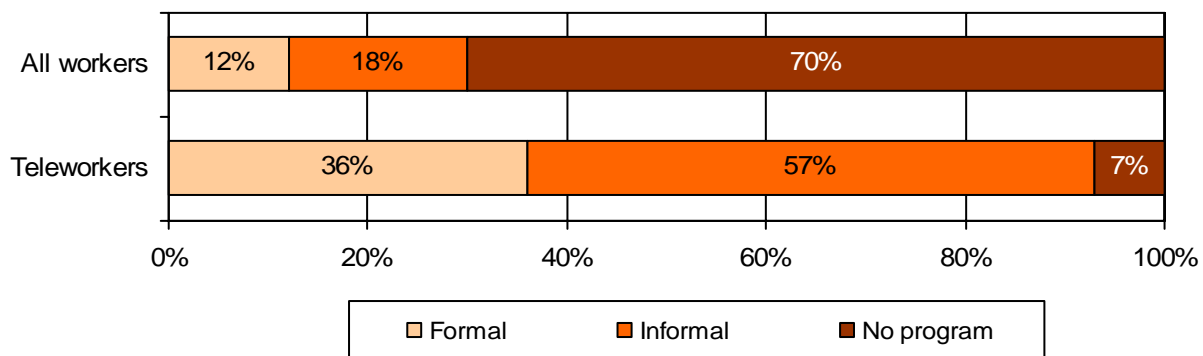
**Figure 17**  
**Length of Time Teleworking**  
(n = 908)



**Formal or Informal Telework Arrangement** – Employers can offer telework as part of a formal programs, with standard, defined telework policies, or through informal arrangements between individual workers and their supervisors. Respondents who teleworked were asked which arrangement they used. Respondents who did not telework were asked if their employer had a telework program, either formal or informal, even though the respondent did not use it.

Figure 18 presents the telework program status for all workers and for teleworkers. The top bar in the figure shows that about three in 10 respondents said their employers allowed some telework, either under a formal program (12%) or under an informal arrangement (18%). The majority (70%) of respondents said their employers did not have any telework program or that they didn't know about any program.

**Figure 18**  
**Formal or Informal Telework Arrangements**  
All Workers (n = 6,269) and Teleworkers (n = 912)



Teleworkers were more likely than were respondents overall to work for an employer with a formal telework program. Almost four in 10 (36%) said they teleworked under a formal arrangement and 57% said they teleworked under an informal arrangement with their supervisor. A small percentage (7%) said their employers did not have any telework program or that they didn't know about any program. A large share of these respondents teleworked infrequently, for special projects or in emergencies. This might mean that they occasionally request to work outside the main work place, but that they do not consider it an "arrangement" with a supervisor.

The availability of telework arrangements varied by the type of employer for which a respondent worked. Formal programs were most common among respondents who worked for a federal government agency. A quarter (27%) of respondents who worked for federal agencies said their employer had a formal program, compared to only about 13% of respondents who worked for non-profit organizations, 9% who worked for private employers, and 9% who were employed by state/local agencies.

Respondents who worked for non-profit organizations or private employers were most likely to have informal telework. A quarter (24%) of non-profit employees and 20% of employees of private firms said their employers permitted informal telework. Informal telework was offered to 17% of federal agency workers. State/local government agencies were least likely to permit telework under any arrangement; 13% offered informal telework, but more than three-quarters (78%) of these respondents said their employer did not permit telework under any arrangement.

Telework Frequency – As shown in Table 7, most teleworkers (60%) said they telework at least one day per week. Twenty-two percent said they telework a few times each month. The remaining two in 10 teleworkers do so infrequently, either for special projects (10%) or less than once per month/only in emergencies (8%). Teleworkers use this arrangement about 1.7 days per week on average.

**Table 7**  
**Frequency of Telework**  
(n = 921)

Frequency	Percentage
Occasionally for special projects	10%
Less than once per month/emergency	8%
1 – 3 times per month	22%
1 day per week	18%
2 days per week	15%
3 or more times per week	28%
<b>Average days per week</b>	<b>1.7</b>

## **Availability and Use of Transportation Facilities**

The VA SOC Survey examined the availability of transportation options, such as HOV lanes, transit, and Park & Ride (P & R) lots and respondents' attitudes toward these facilities and services.

Commuters' choice of travel mode for commuting was influenced by the availability of infrastructure facilities that support the use of alternative modes. About half of Virginia commuters had access to public transit in the area where they live and about six in 10 said transit operated in their work area. Transit use was notably higher among commuters who lived close to bus stops and train stations than for those who lived farther away.

Availability of HOV lanes, which offer significant time savings and travel time reliability, also motivate use of alternative modes. These facilities are less widely available in Virginia; only about 21% of commuters said there was an HOV lane along their route to work. Greater availability of HOV lanes could generate SOV reductions for Virginia.

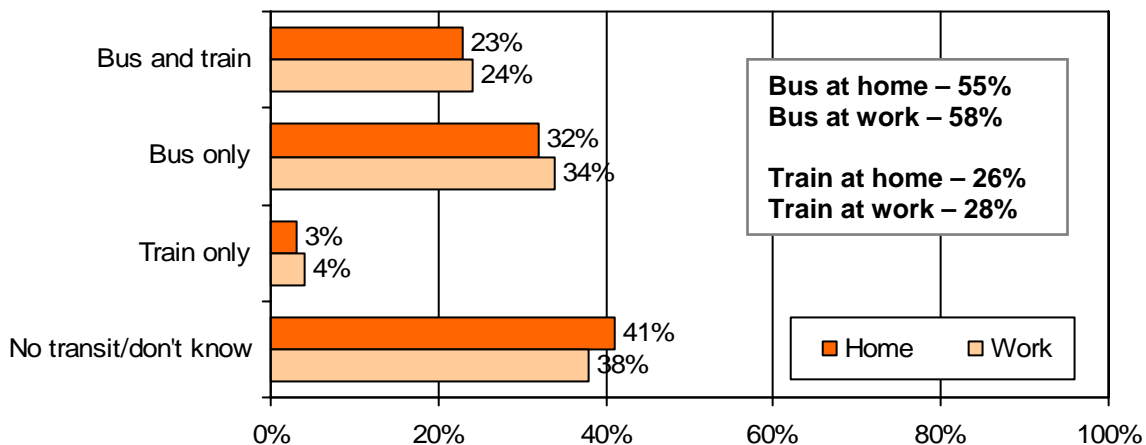
### **Public Transportation Services**

An essential element for use of public transportation for commuting is that a bus or train operates between commuters' home and work areas. To assess transit availability, respondents were asked to name any public transportation operators that they knew provided service in the area where they lived. A second question asked about transit companies operating in the area where they worked. Respondents also were asked how far their homes were from the nearest bus stop and the nearest train station.

Transit Companies Operating – Figure 19 presents the results for the first question. More than half (59%) of respondents said that they knew the name of some public transportation operator that provided service in their home area. About a quarter (23%) said they knew of both bus and rail service, a third (32%) knew of bus service but not rail, and 3% said they knew of train service but not bus service. The remaining 41% of respondents said either that no bus or train companies provided service or that they thought service operated but did not know the name of the companies.

**Figure 19**  
**Transit Service Available in Home Area and Work Area**

(Home Area n = 6,528, Work Area n = 6,472)

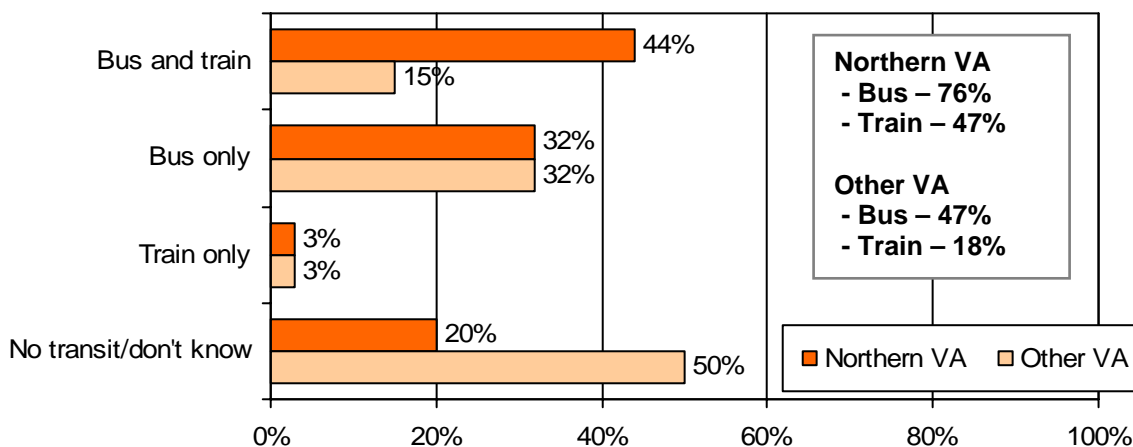


The percentage who said they knew the names of transit operators that provided service in their work area was approximately the same. A quarter (24%) named both bus and train service, a third (34%) knew of bus service only, and 4% said they knew only that train service was provided. About four in 10 said that no transit companies operated transit service in their work area or that they believed some service was available but did not know the names of operators that provided service.

As illustrated in Figure 20, transit service was much more widely available in Northern Virginia than in other parts of the state. More than three quarters of Northern Virginia respondents could name bus companies that served their home areas, compared with 47% of commuters in Other Virginia areas. Train service was similarly disproportionately distributed. About half of Northern Virginia respondents said they knew of train service in the area where they lived, while only two in 10 (18%) respondents who lived in Other Virginia areas could name a train service in their home area.

**Figure 20**  
**Transit Service Available in Home Area – Northern VA vs Other VA**

(Northern Virginia n = 2,738, Other Virginia n = 3,790)

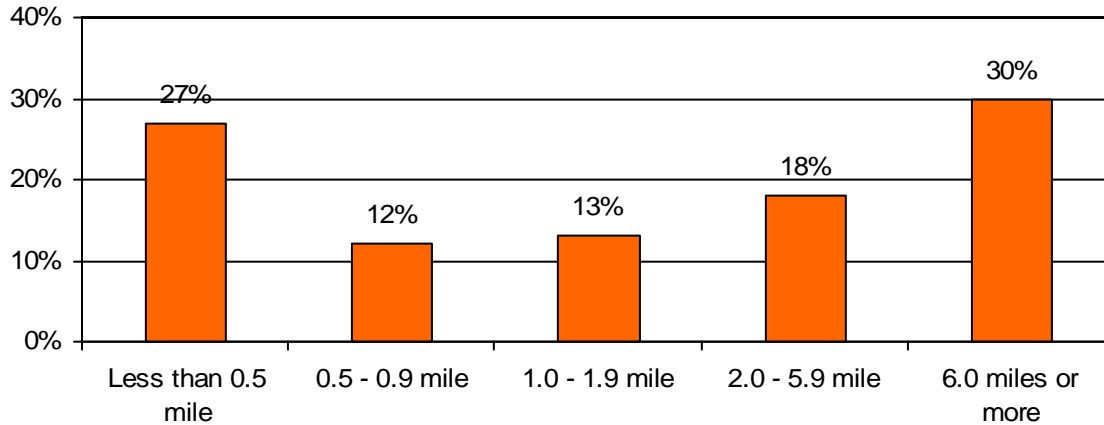


Distance to Bus Stop – The results presented above reflect respondents' perception of transit availability; they are not an objective measure of the level of transit access. A respondent who is willing to drive to a bus stop or rail station might consider service that operates within five miles of his home to be "in my home area," while another respondent who lives within one mile could feel that "no transit operates." The survey also did not address other factors that might enter into a respondent's assessment of the practical feasibility of using transit, such as the directness of the trip or the time needed to make the trip. It's possible that some respondents considered these factors in assessing whether "service was provided" and others might have excluded them from their assessment.

To assess a measure of the closeness of transit, all respondents, including those who said that no transit operated, were asked the distance from their homes to the nearest bus stop and nearest train station. Figure 21 shows the distribution of bus access distance. A quarter (27%) of respondents said they lived within one-half mile of a bus stop and half (52%) said they lived within two miles. Over all respondents, the average distance reported was 8.3 miles.

**Figure 21**  
**Distance from Home to Bus Stop (Reported by Respondents)**

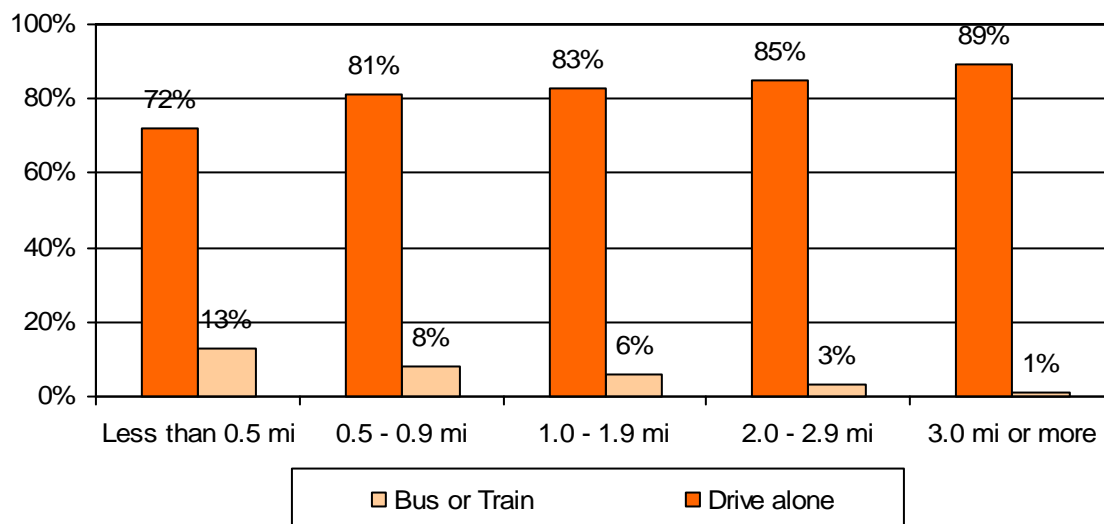
(n = 4,812)



**Transit Use by Distance to Bus Stop** – Use of transit for commuting is strongly related to the distance a commuter has to travel from home to a bus stop. Figure 22, which presents results for commuters who primarily ride a bus or train and for those who primarily drive alone to work, illustrates this clearly. As the reported distance to the nearest bus stop increases, the drive alone rate increases and the percentage of commuters who use transit declines.

**Figure 22**  
**Primary Commute Mode by Distance from Bus Stop (Reported by Respondents)**

(Less than 5 blocks n = 1,580, 6 to 9 blocks n = 551, 1.0-1.9 miles n = 537, 2.0-2.9 miles n = 282, 3.0 miles or more n = 1,962)



More than one in 10 (13%) commuters who lives less than five blocks from a bus stop uses a bus or train to get to work and 72% drive alone. At a distance of between six and nine blocks (less than one mile), 81% of commuters drive and 8% ride transit. When the distance reaches between 2.0 mile and 2.9 miles, 85% drive alone and only 3% use transit. At a distance of 3.0 miles or more from a bus stop, bus/train use drops to just 1%.

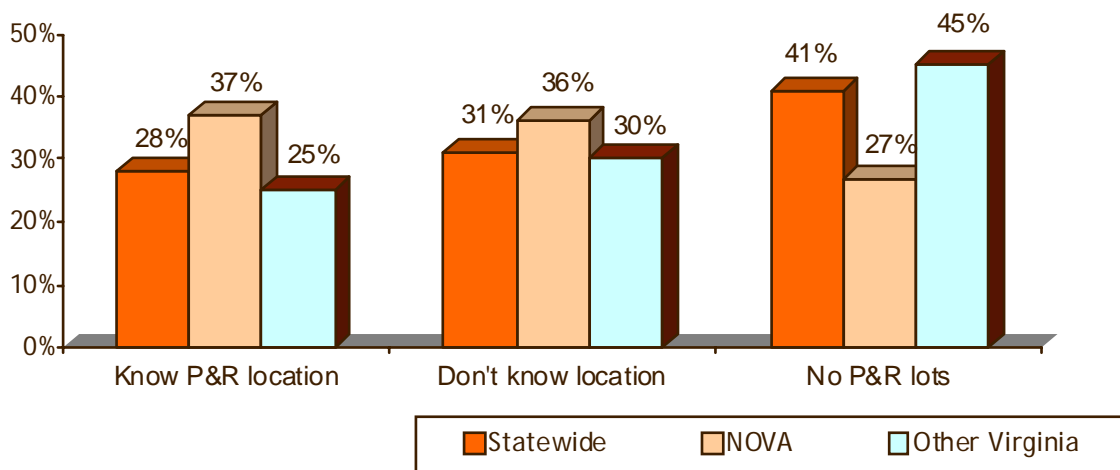
### **Park & Ride Lot Availability and Use**

Statewide, about 16% of commuters who use an alternative mode for their trip to work drive to a central location, such as a P & R lot. These facilities serve an important function in supporting use of alternative modes. As shown in Figure 23, a quarter (25%) of respondents across the state said they knew the locations of P & R lots along their commuting route. About one in three (30%) said they did not know the locations and four in 10 (45%) said there were no P & R lots along their route to work.

This finding is quite consistent with other research in Virginia. The *Virginia Beach Impact Study* (2006) reported, for example, that 25% of commuters in the Virginia Beach area had a P & R lot available on their commute to work.

The figure also shows that awareness / availability of P & R lots varied by home location. Respondents who lived in Northern Virginia were more likely (37%) to say they knew of a P & R lot on their route, while only 25% of respondents who lived in Other Virginia areas knew of a lot along their route.

**Figure 23**  
**Awareness of Park & Ride Lots Along Route to Work – By Home Region**  
 (Statewide n = 6,467, NOVA n = 2,732, Other Virginia n = 3,735)



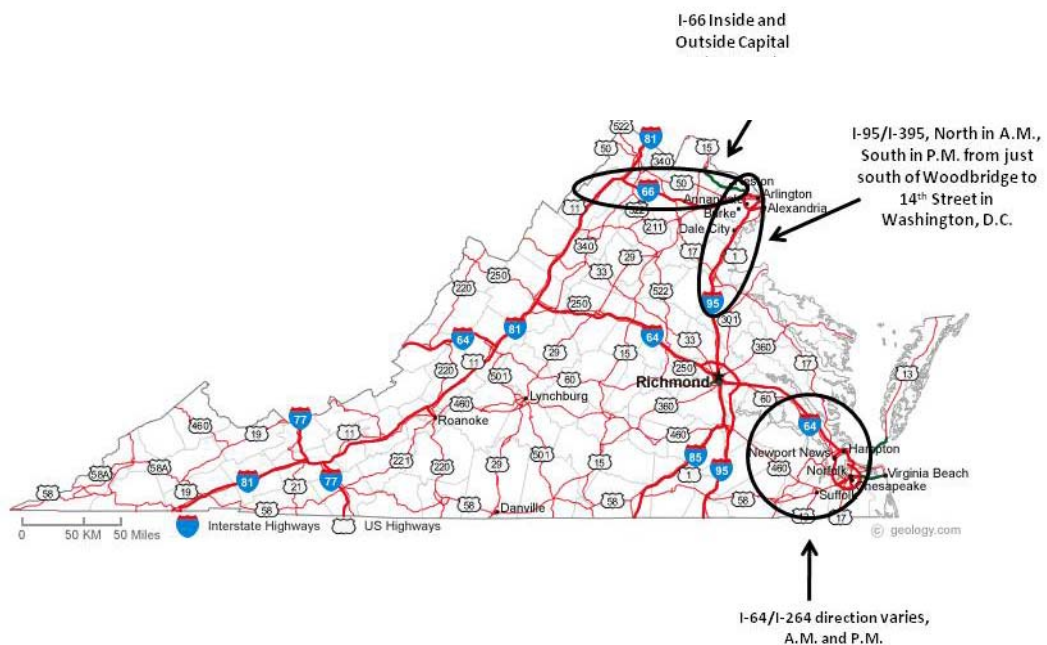
Of those who knew the locations, 13% had used these lots when commuting during the past year. Use of P & R lots was twice as high (19%) in Northern Virginia than in other areas of the state (10%).



## **Availability and Use of HOV Lanes**

The survey also examined the availability and use of High Occupancy Vehicle (HOV) lanes, highway lanes that can be used only by vehicles that carry more than one occupant, such as carpools, vanpools, and buses. HOV lanes exist only in a few metropolitan areas of the state, including Northern Virginia, Hampton Roads, and in the Interstate-95 corridor between Fredericksburg and Washington, DC and the Interstate-66 corridor west of Washington DC.

**Figure 24**  
**Virginia High Occupancy Vehicle Lanes (HOV)**

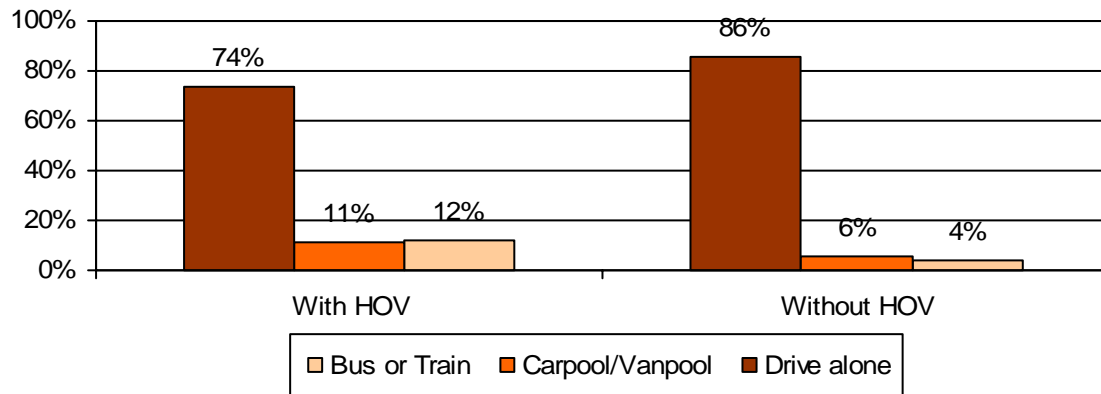


Over half (56%) of respondents lived and/or worked in one of the areas where HOV lanes exist. Of those residents, 37% said there was a special HOV lane along their route to work and 30% of these commuters said they used these lanes. This equated to about 6% of total Virginia commuters and 11% of commuters who lived in HOV areas. The incentive to use the HOV lane was substantial. Respondents who used HOV lanes for commuting estimated they saved an average of 23 minutes for each one-way trip.

**HOV Lane Influence on Commute Choice** – HOV lanes appear to influence commuters' choice of commute modes. Half (47%) of the respondents who used the lanes for commuting said availability of the HOV lane influenced their decision to carpool, vanpool, or ride transit for their commute. The influence on carpooling is best illustrated by the drive alone and carpool/vanpool mode shares when HOV lanes are available and when they are not. These results are shown in Figure 25.

**Figure 25**  
**Primary Commute Mode by Availability of HOV Lane**

(With HOV n = 1706, Without HOV n = 2912)



About 11% of respondents who said an HOV lane was available to them carpooled or vanpooled, compared with 6% of respondents who did not have access to HOV. The drive alone rate for respondents who had access to HOV was 74%, compared to 86% for respondents who said there was not an HOV lane along their route to work.

## **Availability and Use of Commuter Assistance Services**

One objective of the VA SOC survey was to determine commuters' awareness and use of commuter advertising and commuter information and assistance services that might be available to them to help with their travel to work. These services could be provided by a regional or local commuter service organization or by an employer.

Commuters' mode choice decisions are influenced by many factors, including travel time, travel cost, and convenience. Their decisions also can be influenced by how much they know of available travel options, the advantages of using various options, and support services that make use of the options easier or less costly. For this reason, information and support services are an important element in a comprehensive support system for alternative modes.

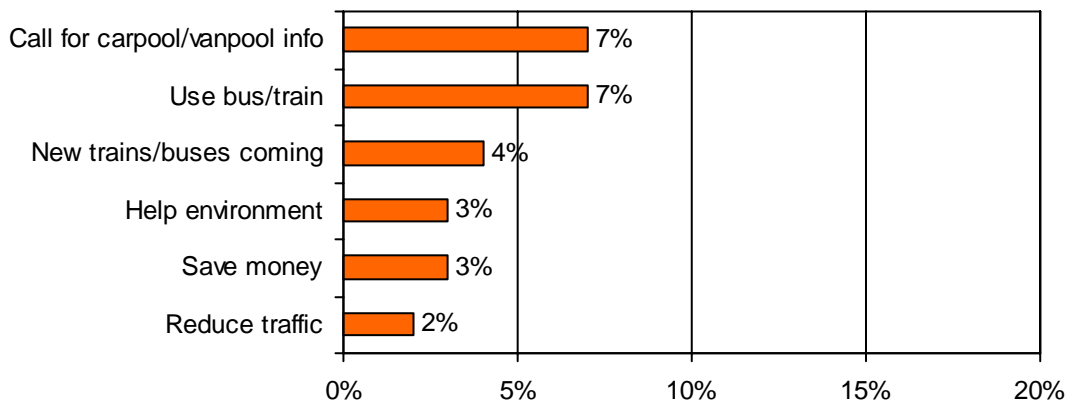
### **Commuter Advertising**

Awareness of Advertising – About half (47%) of all respondents said they had seen, heard, or read advertising about commuting in the six months prior to the survey. These respondents were then asked what advertising messages they recalled. About two-thirds who had heard or seen ads said could recall a specific message. This represented about a third (31%) of all respondents in the state.

The most common messages recalled are presented in Figure 26. They fell into three broad categories: general rideshare, rideshare benefits, and commuter programs/services.

**Figure 26**  
**Commuter Advertising Messages Recalled**

(n = 6,893)



One of the top reasons noted was a general rideshare message, “use the bus, train, Metrorail,” which was recalled by 7% of respondents. Smaller numbers of respondents mentioned rideshare benefit messages, such as “it would help the environment” (3%), “saves money” (3%), or “it reduces traffic” (3%). Commuters also named messages related to commuter programs or services. Seven percent mentioned “you can call for carpool/vanpool information” and 4% said they had heard that “new trains or buses are coming.”

About four in 10 (39%) respondents who recalled an advertisement said they heard it on television. A quarter (26%) said they heard the ad on the radio and a similar percentage (24%) said they saw the advertisement in a newspaper. One in 10 (13%) saw the ad on a transit vehicle or at a bus stop or train station. A few respondents mentioned other sources.

**Influence of Advertising Messages on Commute Choice** – Advertising appeared to have influenced some respondents to consider making a change in how they travel to work. One in five (21%) respondents who had seen, heard, or read advertising said that they were more likely to consider ridesharing or using public transportation after seeing or hearing the advertising and about 17% of these respondents said they took some action to try to change how they commuted. These respondents represented about 1.5% of the total workers in the state or about 45,000 commuters.

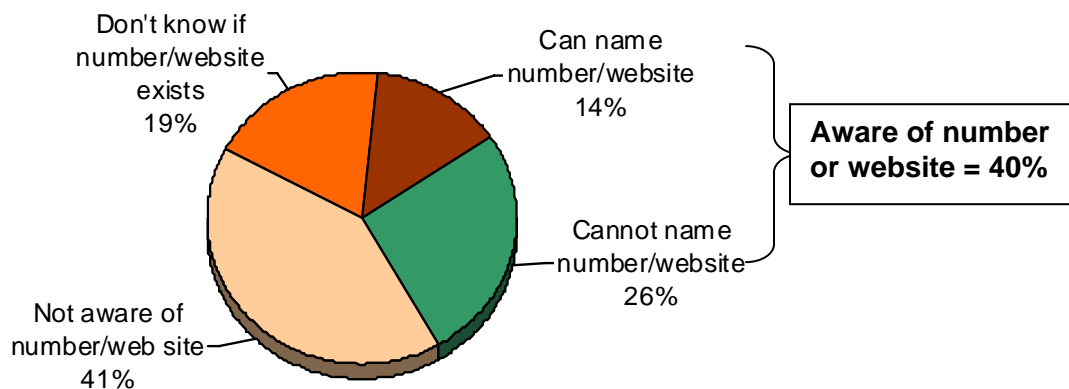
Most of the respondents who took an action sought information about commuting, either from a local or regional commute services organization (6%) or on the internet (4%). Three percent said they tried or started using an alternative mode for commuting. More than two-thirds (69%) of respondents who had taken some action said the advertising they saw or heard encouraged the action.

### **Awareness of Commuter Assistance Numbers/Websites**

The survey also investigated commuters' knowledge and use of regional and local commuter assistance services. As noted earlier, 14 regionally-based organizations provide travel information and assistance to commuters in their respective service areas. The survey included questions to assess the programs' visibility to their target markets and to estimate how many commuters in the region have used the services.

First, respondents were asked if they were aware of a telephone number or website they could use to obtain information on ridesharing, public transportation, HOV lanes, and telework in the area where they live or work. As indicated in Figure 27, 40% of respondents statewide said they knew such a number existed and about a third of these respondents, about 14% of all respondents, could name a specific number or website. The remaining respondents either said there was not such a phone number or website (41%) or that they did not know if a phone number or website existed (19%).

**Figure 27**  
**Recall of Regional Commuter Assistance Telephone Number or Website**  
 (n = 5,770)



### **Local or Regional Commuter Assistance Programs**

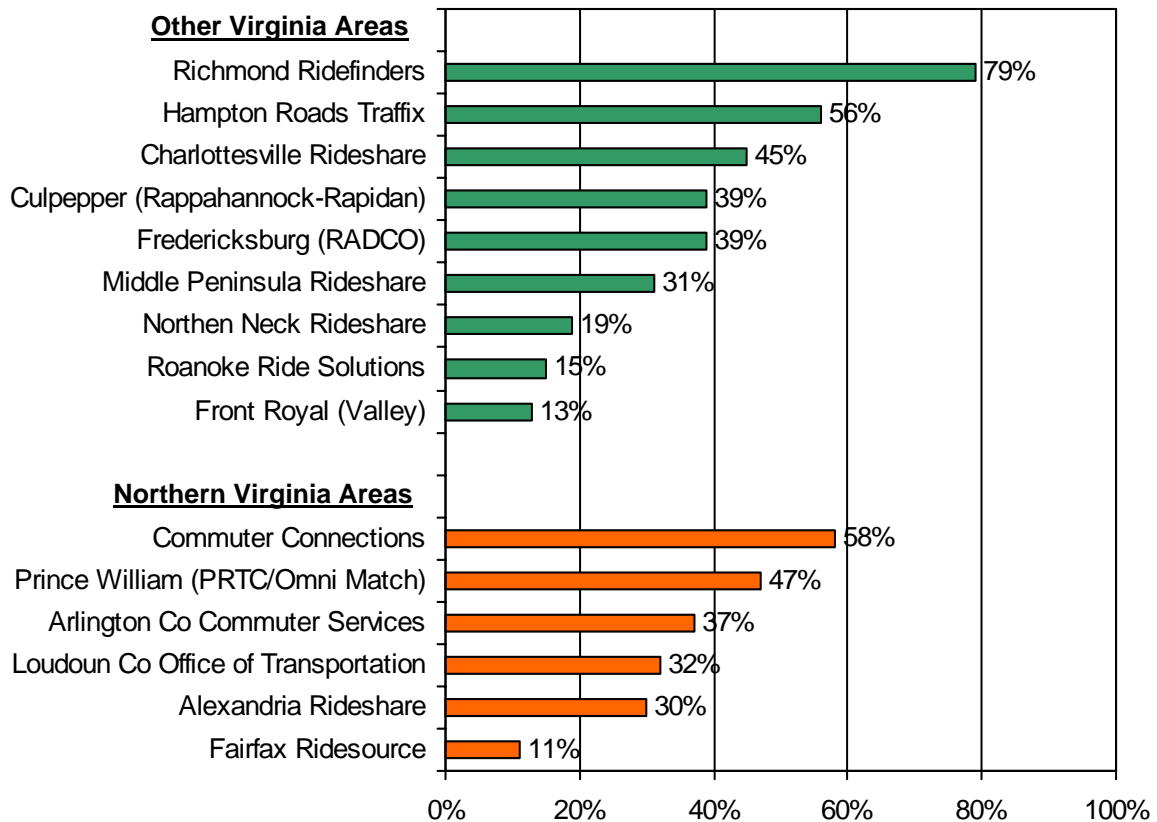
The survey also explored respondents' awareness and use of local or regional commuter assistance programs. Indications of respondents' awareness appeared in unprompted questions about regional commuter advertising messages, advertising sponsors, and regional commuter information resources, but respondents were asked specifically if they knew of and had used the program or programs that offered services in their home or work areas.

Half (50%) of commuters statewide said they knew of one or more regional commuter programs. Figure 28 presents the percentage of respondents who said they had heard of each of the 14 regional/local organizations, either unprompted or when prompted with the organizations' names. Programs listed at the top of the figure operate in "Other Virginia" areas and those at the bottom of the figure operate in Northern Virginia.

**Figure 28**  
**Heard of Local Jurisdiction Commute Assistance Program**  
**Percentage by Region Ranked from Highest to Lowest**

(Other Virginia - Richmond n = 687, Hampton Roads n = 667, Charlottesville n = 336, Culpeper n = 324, Fredericksburg n = 638, Middle Peninsula n = 219, Northern Neck n = 213, Roanoke n = 308, Front Royal n = 307)

(Northern Virginia - Commuter Connections n = 3, 628, Prince William n = 722, Arlington n = 830, Loudoun n = 690, Alexandria n = 714, Fairfax n = 1,288)



Awareness of regional/local programs ranged from 11% to 79% of respondents who lived and/or worked in a particular program's service area. Richmond Ridefinders was known to 79% of commuters who either lived or worked in its service area. Hampton Roads Traffic (56%) and the Northern Virginia regional program Commuter Connections (58%) were known to at least a half of their target area respondents. Five programs were recognized by between a third and half of the target population.

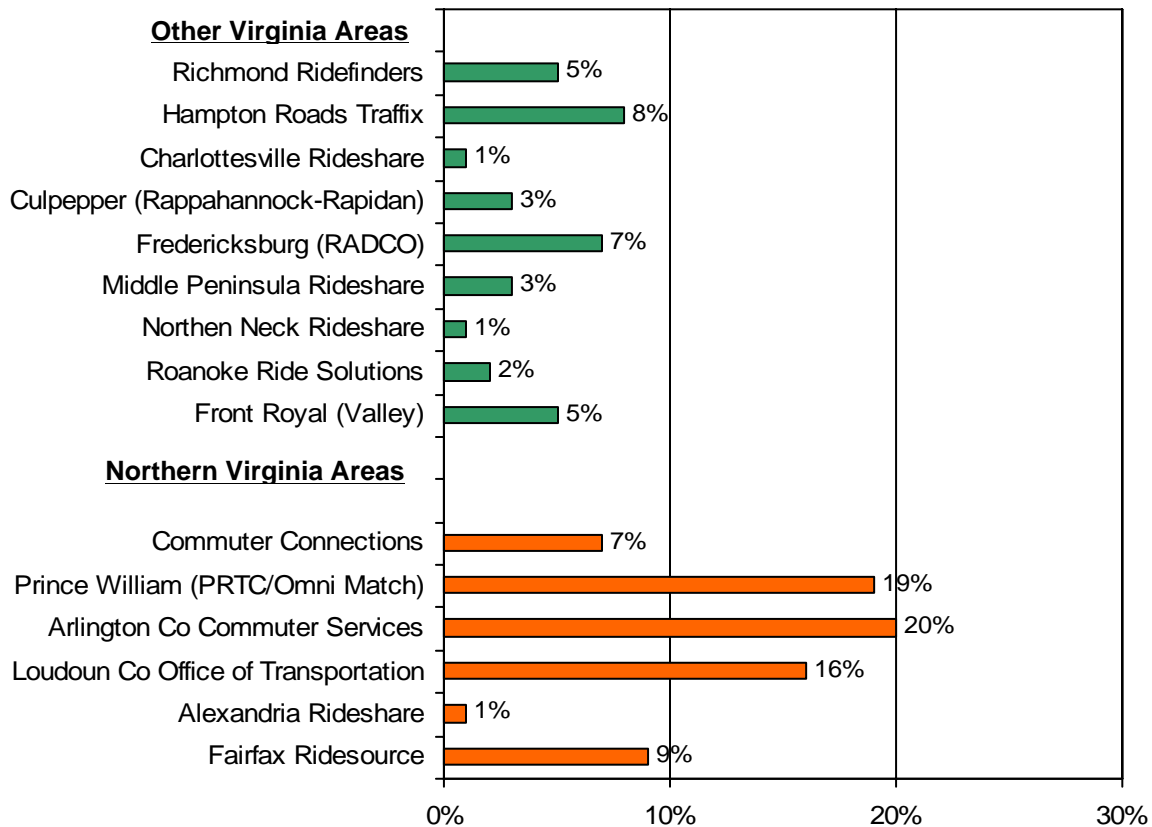
Use of Local Jurisdiction Services – Figure 29 shows the percentage of respondents who knew of the programs who said they had contacted the organizations. The programs are shown the same order as in Figure 19, that is, from highest awareness to lowest awareness in the "Other Virginia Areas" and Northern Virginia. As is quite clear, use was not consistent with awareness; use was generally higher for programs in Northern Virginia than for programs in Other Virginia Areas.

**Figure 29**  
**Used Local Jurisdiction Commute Assistance Program**  
**Percentage by Region Ranked from Highest to Lowest**  
**Percentage of those Aware of Programs**

(Other Virginia - Richmond n = 513, Hampton Roads n = 358, Charlottesville n = 148, Culpeper n = 125,

Fredericksburg n = 242, Middle Peninsula n = 72, Northern Neck n = 84, Roanoke n = 39, Front Royal n = 38)

(Northern Virginia - Commuter Connections n = 2,004, Prince William n = 336, Arlington n = 312, Loudoun n = 209, Alexandria n = 225, Fairfax n = 139)



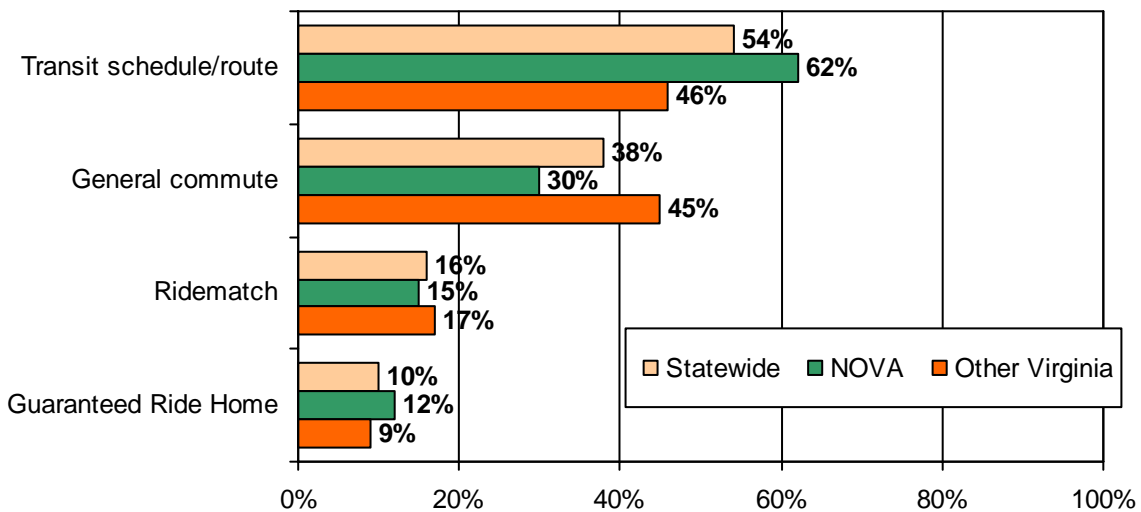
About two in 10 respondents who knew about PRTC OmniMatch and Arlington County Commuter Services said they had contacted these organizations and 16% of respondents who were aware of the program in Loudoun County had contacted the program. Six other programs had been contacted by 5% or more of the respondents who knew of the programs. All other local organizations had lower contact levels.

The higher use of these services in Northern Virginia is likely due to the greater exposure of commuters to the services, through advertising and other outreach, and to need. Commuters in Northern Virginia face more congested travel, a factor that would be likely to encourage commuters to seek options and information on options for travel to work.

Commute/Travel Information Sought – Finally, respondents who had contacted a local or regional program were asked what information or services they were seeking. The services are shown in Figure 30.

**Figure 30**  
**Information and Services Sought from Local Commuter Assistance Programs**

(Statewide n = 311, NOVA n = 203, Other Virginia n = 108)



By far, the most prominent service sought by respondents was transit information. More than half (54%) of respondents statewide who contacted a local program sought this information. About four in 10 (38%) said they were seeking general rideshare information and 16% wanted ridematching information or help finding a carpool or vanpool partner. One in eight respondents (12%) who contacted a local or regional program wanted information on Guaranteed Ride Home (GRH), a program that provides emergency transportation for commuters who do not drive alone to work and have a personal emergency for which they must leave work during the work day. Respondents who lived in Northern Virginia were more likely than those in Other Virginia areas to seek transit information, while respondents in Other Virginia areas were more likely to ask for general commute information.

## **Employer Incentives That Support Use of Alternative Modes**

Commuters also can receive commuter assistance from their employers at their workplaces. To learn about these services, the VA SOC survey asked commuters about availability and use of two types of commuter assistance services and benefits that their employer might provide at their work place:

- Alternative mode incentives and support services
- Parking facilities and services

Employer-sponsored commuter assistance presents a particular opportunity to encourage use of alternative modes. The VA SOC survey demonstrated a positive connection between use of alternative modes for commuting and the availability of commuter support services, such as transit subsidies, commute information, preferential parking, and other services.

### **Employer Incentives and Support Services**

Four in 10 (43%) respondents statewide said their employer offered one or more incentives or support services, such as a transit or carpool subsidy. About a third (35%) of respondents said their employers offered one or two of these services. An additional 8% said their employers offered three or more services. The percentages for individual services are shown in Table 8. Note that it is possible that some respondents were unaware of services that actually do exist at their worksite, thus, these reported results could undercount services offered by employers. Conversely, some respondents could have reported availability of services that are offered at their worksites by another organization, with the support and assistance of an employer. In these cases, the employer would be a partner in the service, but the results could over-represent employers' independent efforts.

**Table 8**  
**Alternative Mode Incentives and Support Services Reported as Provided by Employers**  
**Statewide, Northern Virginia, and Other Virginia Areas**

<b>Alternative Mode</b>	<b>Respondents Report Availability of Service *</b>		
	<b>Statewide (n = 6,603)</b>	<b>Northern Virginia (n = 2,802)</b>	<b>Other Virginia (n = 3,801)</b>
Metrochek/other subsidies for transit/vanpool	14%	33%	6%
Information on commute options	12%	20%	9%
Bike/pedestrian facilities or services	12%	17%	10%
Preferential parking for carpool/vanpool	11%	16%	9%
Guaranteed Ride Home for emergencies/unscheduled overtime	20%	10%	24%
Financial incentives/subsidies for carpool/vanpool	3%	4%	2%
None – employer doesn't offer any services	57%	50%	60%

\* Might add to more than 100% because multiple responses were permitted.



The most commonly noted service was GRH, mentioned by 20% of respondents. GRH programs are offered by most of the 14 regional commuter service organizations, thus these services would either be supplemental to the regional GRH programs or offered by the regional organization through the employer. Between 11% and 14% of respondents said their employers offered subsidies for transit/vanpool (14%), information on commuter transportation options (12%), services for bikers and walkers (12%), or preferential parking (11%). Only about 3 % said their employers offered carpool subsidies.

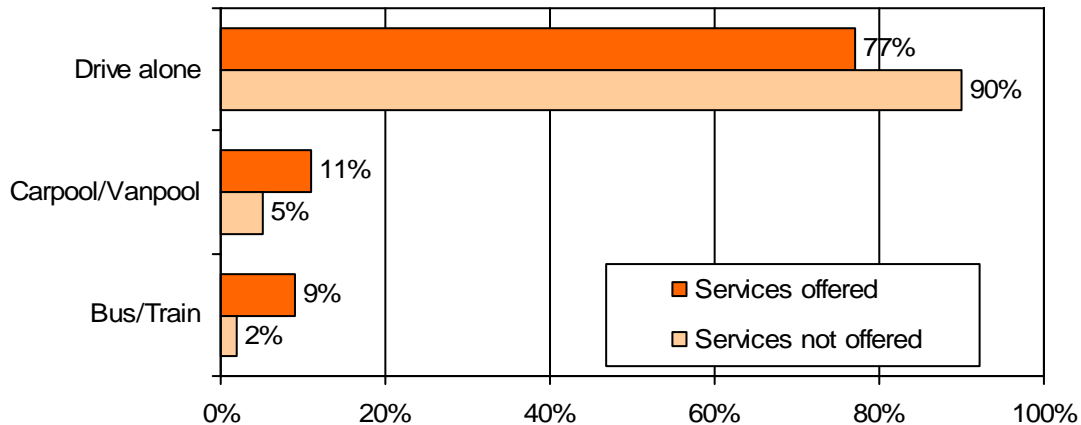
Respondents in Northern Virginia reported greater access to services than did respondents in Other Virginia areas; half (50%) of Northern Virginia respondents said one or more services was available compared to 40% of Other Virginia area respondents. But GRH was named much more often by respondents in Other Virginia areas (24%) than in Northern Virginia (10%). This is likely because Northern Virginia has an extensive regional GRH program, reducing the need for employers to provide individual GRH services.

About four in 10 (38%) commuters who said they had access to one or more alternative mode incentive or support service said they had used a service. Commonly used services included: commute information (44%), transit/vanpool subsidies (36%), GRH (28%), carpool subsidies (19%), bike/walk services (13%), and preferential parking (12%).

Commute Mode by Employer Commute Assistance – Research from many areas of the country suggests that commuters' travel choices are influenced by availability of worksite commute services and by the cost they have to pay to park at work. The VA SOC data support these conclusions. Figure 31 shows the percentages of respondents who used various commute modes by whether or not their employer provides commuter assistance services or benefits.

Other research in Virginia also documents the importance of employer programs in the choice of alternate commute modes. The *Regional Commuter Study* (2006), conducted in Hampton Roads, reported that commuters who rideshare were more likely than drive alones to work for employers who provided rideshare support. Drive alones who said they were *likely* to rideshare were more likely to work for employers who provided rideshare assistance than were other drive alones.

**Figure 31**  
**Current Primary Commute Mode**  
**by Commuter Services/Benefits Reported Offered**  
 (Services offered n = 3,054, Services not offered, n = 3,434)



As the figure illustrates, respondents whose employers provided alternative mode incentives and support services were less likely to drive alone (77%) than were respondents whose employers did not provide these services (90%). Respondents who had these services at their worksites carpooled or vanpooled at twice the rate of respondents who did not have these services. Train use was substantially higher; 9% of respondents whose employers offered incentives/support services rode the train to work, compared with 2% of respondents whose employers did not offer these services.

### **Parking Facilities and Services**

Respondents also were asked about the parking services available at their worksites. These results are displayed in Table 9.

**Table 9**  
**Parking Facilities / Services Available to Commuters**  
**Statewide, Northern Virginia, and Other Virginia Areas**

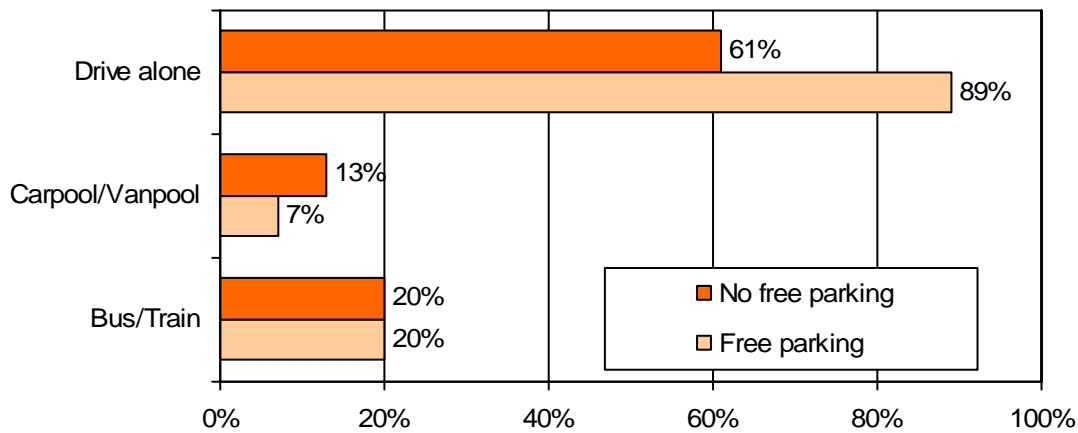
Parking Facilities and Services	Parking Facilities Offered		
	Statewide (n = 6,426)	Northern Virginia (n = 2,706)	Other Virginia (n = 3,720)
Free parking, on-site or off-site	86%	73%	91%
Employee pays all parking charges	11%	19%	7%
Employee and employer share parking charge	3%	8%	2%

Statewide, 86% of respondents said they had free parking, either on-site or nearby off-site. Fourteen percent said they paid at least part of the cost of parking; 11% paid the total cost and 3% paid a portion of the cost with the balance paid by their employers. As the table indicates, free parking was less common in Northern Virginia than in other parts of the state. Fewer than three-quarters (73%) of Northern Virginia respondents had free parking, compared with nine in 10 respondents who lived in Other Virginia areas.

**Commute Mode by Parking Services Offered** – Figure 32 presents a comparison of mode use rates for respondents who had free parking and those who did not have free parking. The difference in drive alone rates for these two groups was dramatic; 89% of respondents who had free parking drove alone, compared with only six in 10 (61%) respondents who did not have this benefit. Respondents who had to pay for parking used carpool / vanpool and transit at higher rates than did respondents who had free parking. The difference was especially striking for transit; transit mode share was 20% for respondents who did not have free parking and 2% respondents who did.

**Figure 32**  
**Current Primary Commute Mode**  
**by Availability of Free Parking**

(No free parking n = 1,097, Free parking, n = 5,240)



The mode use differences illustrated in Figure 31 (incentives / support services) and Figure 32 (parking services) were statistically significant, but it is not possible to say that the availability of these services or lack of free parking was the only reason for differences in mode use. Employers located in urban areas were much more likely to offer commuter assistance services and much less likely to offer free parking than were employers in less urban settings. Respondents who worked in urban areas likely would be faced with greater impediments to driving alone, such as greater congestion levels, and have greater availability of commute options, such as transit, than would be experienced by workers outside these areas. Any of these factors might have been at least as important in influencing respondents' commute mode choices.

## **Importance of Future Investment in Alternative Transportation**

Finally, the VA SOC survey examined commuters' opinions about the benefits generated by use of alternative modes and the importance of future Virginia investment in alternative transportation. Respondents were asked about the following:

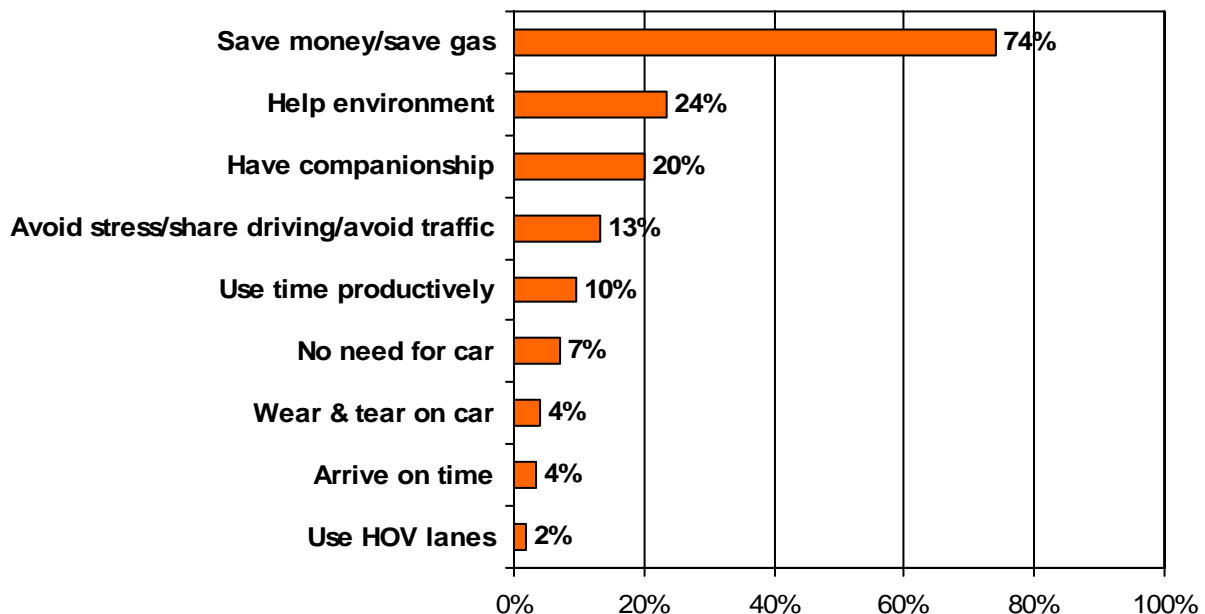
- What personal benefits do people who use alternative modes receive from using these types of transportation?
- How does society benefit from ridesharing; what impact or benefit does a community or region receive when people rideshare?
- How important is it that Virginia invests in programs to support and make these transportation options more available to commuters?

Previous sections of this report have demonstrated that both transportation infrastructure and commute support services play a role in encouraging commuters to use alternative modes for commuting. Expansion of these services in Virginia will require further state funding, an investment broadly supported by Virginia commuters, both those who use alternative modes and those who do not. The VA SOC survey showed that Virginia commuters recognize that use of alternative modes offers both personal benefits to commuters who use these modes and benefits to society generally, in the form of reduced traffic congestion, enhanced environmental quality, reduced energy use, and lower wear and tear on Virginia roads.

### **Personal Benefits of Alternative Mode Use**

When asked what personal benefits users of alternative modes receive from using alternative modes, 90% named at least one benefit and 53% reported two or more personal benefits. Figure 33 details the responses to this question.

**Figure 33**  
**Personal Benefits of Alternative Mode Use**  
(n = 3,530)



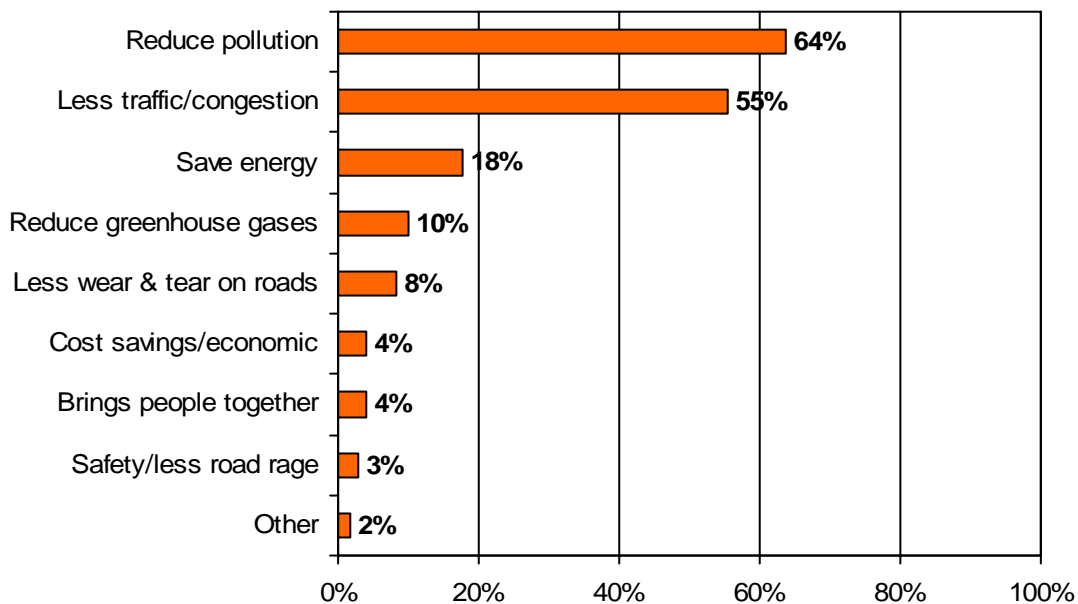
Saving money or gas topped the list of personal benefits, cited by an overwhelming 74% of respondents statewide. No other benefit came close in the percentage of responses. About a quarter (24%) of respondents said alternative mode users received a benefit by helping the environment, indicating a recognition that use of alternative modes has an impact on environmental quality and suggesting that alternative mode users appreciate contributing to cleaner air.

Two in 10 (20%) respondents noted that alternative modes offer companionship on the commute, 13% said use of these modes can reduce commute stress, and 10% said they believed alternative mode users could use commute time productively. Reducing the need for a car, reducing wear and tear on a car, and helping users arrive on time were three other benefits noted by 7%, 4%, and 4% of commuters, respectively.

### **Societal Benefits of Alternative Mode Use**

When asked what benefits society receives from use of alternative modes, 89% of respondents named at least one benefit and 50% reported two or more societal benefits. Figure 34 displays these responses.

**Figure 34**  
**Societal Benefits of Alternative Mode Use**  
(n = 3,318)



Nearly two-thirds (64%) of respondents said that use of alternative modes could reduce pollution or help the environment and 55% said it could reduce traffic/congestion. Nearly two in 10 (18%) cited energy savings as a benefit and one in 10 (10%) said alternative mode use could reduce greenhouse gases. About one in 10 (8%) also noted that it could reduce wear and tear on roadways, presumably reducing the cost to maintain or repair roads. Other benefits, such

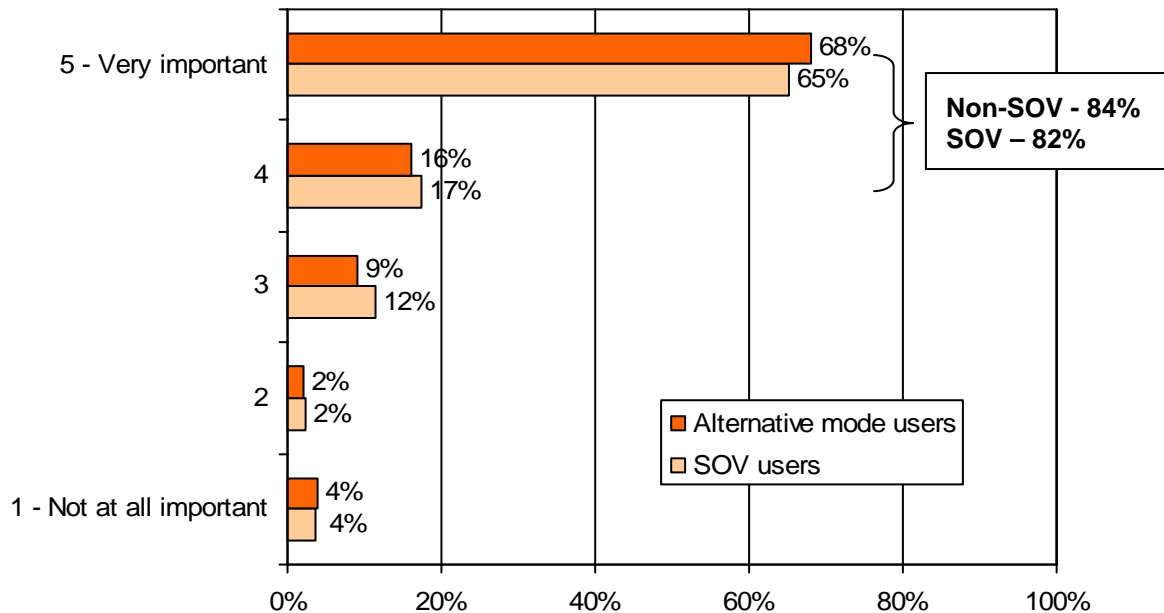
as economic cost savings, bringing people together, and reducing road rage, were cited by small percentages of respondents.

### **Importance of Investments in Alternative Mode Support**

Both respondents who drive alone and those who use alternative modes were asked about the importance for Virginia to invest in alternative mode support services to make these options more available for commuters. Respondents were asked to rate the importance on a scale of 1 to 5, where 5 meant very important and 1 meant not at all important.

Overall, more than 8 in 10 respondents (82%) rated the importance either 4 or 5 on the 5-point scale. Only 6% of respondents statewide gave a rating of 1 or 2, indicating little or no importance. As illustrated in Figure 35, the type of transportation that the respondent used did not appear to influence commuters' ratings; 82% of commuters who primarily drove alone to work and 84% of commuters who primarily used an alternative mode rated the importance a 4 or 5.

**Figure 35**  
**Importance of Investing in Alternative Mode Support – by Primary Commute Mode**  
(Non SOV n = 496, SOV n = 2,997)



When asked why they felt it was important to make this investment, commuters mentioned many different reasons. Prominent reasons included the following:

- 22% Help reduce traffic congestion
- 16% Help people who don't have a car or other personal form of transportation
- 16% Reduce pollution or be good for the environment
- 13% Help give people travel options

- 8% Save costs/reduce gas prices
- 6% Save energy/reduce oil dependence
- 5% Encourage transit use/encourage respondent to use transit

## **Summary**

This document reports the findings of the first Virginia State of the Commute Survey, a comprehensive survey of travel and transportation among employed residents of the Commonwealth of Virginia. This study was designed to document and profile Virginians' travel to work, their opinions and attitudes about commuting and the services they use to make commuting easier.

Data for this survey were collected during the spring and summer of 2007. This telephone survey used a questionnaire designed specifically for this research. It was broadly based and covered an extensive range of topics, including such issues as travel mode use for the work commute, availability of park & ride lots, and recall of transportation and commuting advertising and communications. Interviews lasted an average of 22 minutes.

The sample is robust, consisting of interviews with 7,045 employed Virginians. A sample of this size has a margin of error of +/- 1.2 points at the 95% confidence level. It also allowed for the examination of regional differences.

This first-ever Virginia State of the Commute Study defines a baseline against which future commute changes can be examined. DRPT anticipates conducting this study on a three-year cycle to monitor and assess changes and patterns in work commute behaviors and preferences in Virginia.

## APPENDIX A

### Characteristics of the Sample

At the end of the survey interview, respondents were asked a series of questions about themselves, including: sex, ethnic background, age, income, home and work locations, type of employer, size of employer, and occupation. These results are presented here, to define characteristics of the sample.

#### Demographic Characteristics

Sex – Most respondents were female (53%) and 47% were male.

Age – As shown in Table 10, about three-quarters of respondents (74%) were between the ages of 25 and 54. About 4% were under 25 and about 22% were 55 years or older.

**Table 10**  
**Respondent Age**  
(n=6,750)

Age Group	Percentage	Age Group	Percentage
Under 24	4%	45 – 54	31%
25 – 34	15%	55 – 64	20%
35 – 44	25%	Over 64	5%

Ethnic Background – As illustrated in Table 11, Caucasians and African-Americans represented the two largest ethnic groups of survey respondents, 80% and 13% respectively. Hispanic/Latino and Asian respondents each accounted for about 2% of respondents.

**Table 11**  
**Ethnic Background**  
(n=6,655)

Ethnic Group	Percentage	Ethnic Group	Percentage
White/Caucasian	80%	Asian	2%
African-American	13%	Other/Mixed	3%
Hispanic/Latino	2%		



Income – Table 12 shows that about six in 10 (63%) respondents had household incomes of \$60,000 or more. A third (32%) had incomes of \$100,000 or more.

**Table 12**  
**Annual Household Income**  
(n = 5,716)

Income	Percentage	Income	Percentage
Less than \$20,000	3%	\$80,000 – 99,999	15%
\$20,000 – 29,999	7%	\$100,000 – 119,999	11%
\$30,000 – 39,999	9%	\$120,000 – 139,000	7%
\$40,000 – 59,999	18%	\$140,000 – 159,000	4%
\$60,000 – 79,999	16%	\$160,000 or more	10%

### **Employment Characteristics**

Type and Size of Employer – Respondents were asked for what type of employer they worked and the number of employees at their worksites. These results are shown in Tables 13 and 14, respectively.

More than half (52%) of the respondents worked for a private sector employer. Government agencies employed about one-third: state and local agencies 18%, federal civilian agencies 8%, and federal military agencies 4%. About one in 10 (8%) worked for a non-profit organization and the remaining 10% were self-employed.

**Table 13**  
**Employer Type**  
(n = 6,888)

Employer Type	Percentage
Private sector	52%
State/local agency	18%
Non-profit	8%
Federal agency – civilian	9%
Federal agency - military	4%
Self-employed	10%

The majority of respondents worked for employers that are either very small or very large. Over half (54%) worked for firms with 100 or fewer employees. About two in 10 (18%) worked for employers that employ 1,000 or more employees.

**Table 14**  
**Employer Size**  
(n = 6,203)

Number of Employees	Percentage
1-25	30%
26-50	12%
51-100	12%
101-250	13%
251-999	15%
1,000+	18%

Occupations – Respondents represented many occupations, as shown in Table 15. About six in 10 respondents worked in professional (41%) or executive/managerial occupations (18%). Other common occupations included administrative support (9%), service (7%), sales (6%) and technicians/technical support (5%).

**Table 15**  
**Occupation**  
(n = 6,799)

Occupation	Percentage
Professional	32%
Executive/managerial	18%
Administrative support	9%
Service	9%
Sales	8%
Business / finance operations / technicians	4%
Precision craft, production	7%
Transportation and materials moving	3%
Protective services	2%
Equipment handlers/cleaners	4%
Military	2%
Other*	2%

\* Each response in Other category was mentioned by fewer than 1% of respondents.



Virginia Department of Rail and Public Transportation

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***The Smartest Distance Between Two Points***